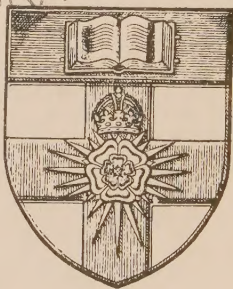


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THE SURVEYORS' INSTITUTION

(Incorporated by Royal Charter),

12, GREAT GEORGE STREET, WESTMINSTER, S.W.

TRANSACTIONS.

VOL. XXI.

SESSION 1888-89.

LONDON:

PUBLISHED AT THE INSTITUTION,

12, GREAT GEORGE STREET, WESTMINSTER, S.W.

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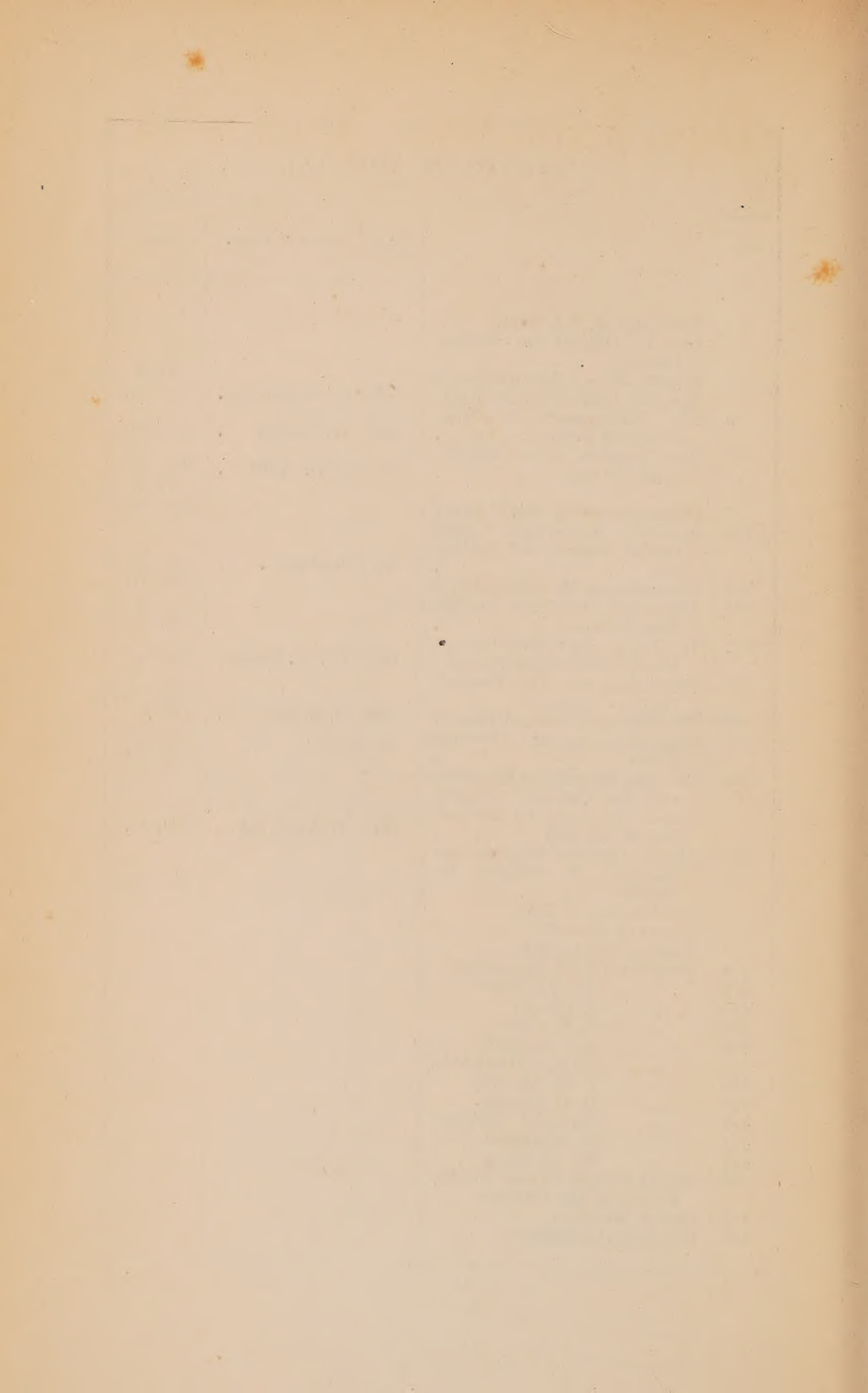


NOTICE.

This Institution does not, as a body, hold itself responsible for statements made or opinions expressed, either in the Papers read or in the discussions which have occurred, at the Meetings.

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The Surgeons' Institution

(INCORPORATED BY ROYAL CHARTER),

12, GREAT GEORGE STREET,

WESTMINSTER, S.W.

OFFICERS, 1888-89.

COUNCIL.

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Vice-Presidents.

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CHARLES JOHN SHOPPEE

FRANCIS VIGERS

THOMAS CHATFEILD CLARKE

Members of Council.

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ROBERT GEORGE CLUTTON

ALEXANDER MILNE DUNLOP

JOHN SHAW

ARTHUR GARRARD

Professional Associate of Council.

EDWARD SMYTH

Associates of Council.

JOHN WOLFE BARRY

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JOHN CLUTTON

EDWARD NORTON CLIFTON

EDWARD RYDE

WILLIAM STURGE

WILLIAM JAMES BEADEL, M.P.

Honorary Secretary.

JOHN WORNHAM PENFOLD

Secretary.

JULIAN C. ROGERS

*Fellows and Associates receive, fortnightly, copies of the Sessional Papers
and of all current publications of the Institution.*

The Surveyors' Institution

(INCORPORATED BY ROYAL CHARTER)

Is established—

1. To secure the advancement and facilitate the acquisition of that knowledge which constitutes the profession of a Surveyor, viz.—the art of determining the value of all descriptions of landed and house property, and of the various interests therein; the practice of managing and developing estates; and the science of ad-measuring and delineating the physical features of the earth, and of measuring and estimating artificers' work.
2. To promote the general interests of the profession, and to maintain and extend its usefulness for the public advantage.

THE INSTITUTION consists of four classes, viz.—FELLOWS, PROFESSIONAL ASSOCIATES, ASSOCIATES, and HONORARY MEMBERS, with a class of STUDENTS attached.

A FELLOW must be more than twenty-five years of age, and must have acquired a practical knowledge of surveying in one or other of its branches as above defined; he must have so practised on his own account for more than five years; or must be a member of a firm of Surveyors established upwards of ten years; or in partnership with a Surveyor of ten years' standing;* or he must have passed the Voluntary Examination declared in the Rules of Examination to appertain to the class of Fellows. Fellows have the right, conferred by the Charter, to use the letters F.S.I. after their names.

A PROFESSIONAL ASSOCIATE must be more than twenty-one years of age, a Surveyor by profession, in practice on his own account or employed as an Assistant in a Surveyor's Office and qualified for the class by having passed the Students' Proficiency Examination, or the Professional Associates' Qualifying Examination. Professional Associates have the right, conferred by the Charter, to use the letters P.A.S.I. after their names.

**These qualifications hold good until the provisions of the Charter relating to the Compulsory Examinations for Fellows come into force.*

An ASSOCIATE must be more than twenty-one years of age, not a Surveyor by profession, but his pursuits must be such as to qualify him to concur with Surveyors in the advancement of professional knowledge.

An HONORARY MEMBER must be a person who, either by reason of his position or experience, or his eminence in science, may be enabled to render assistance in promoting the objects of the Institution, but who is not engaged in practice as a Surveyor in Great Britain or Ireland. He has the privilege of being present and taking part at all Ordinary General Meetings, and of access to the Library, but no right of voting, discussing, or otherwise interfering in the affairs of the Institution; nor is he called on to contribute to its funds.

STUDENTS (who must not be under eighteen years of age) qualify as such by passing the Students' Preliminary Examination. Candidates for Studentship who can produce a Certificate of having passed the Matriculation Examination of the University of Oxford, Cambridge, London, or any other University in the United Kingdom, or who have passed, with Honours, the Senior Local Examination of the University of Oxford or Cambridge, or who have obtained a Higher Certificate at the Examinations of the Oxford and Cambridge Schools' Examinations Board, are exempted from this Examination, and may be admitted by the Council on the recommendation (according to a form) of four Fellows and two Associates, or of the Fellow or Associate to whom they are or have been articulated; but it is obligatory on all Students to undergo the Proficiency Examination at the close of their Student course, at the time and under the conditions applying in each particular case under the Rules of Examination.

The Council may accord to Students such privileges, subject to such terms, regulations, and restrictions, as they shall from time to time prescribe.

Any person desirous of being admitted into the Institution (excepting to the class of Students) must be proposed and recommended according to a form, in which the full name, place of business (if any), usual residence, and qualifications of the candidate must be distinctly specified. This form must be subscribed by him, and signed by at least six Fellows or four Fellows and two Associates, certifying a personal knowledge

of the candidate ; or, in the case of a person who has passed the Qualifying Examination, by four Members of the Council, of whom the President shall be one, after careful enquiry into the antecedents of the applicant.

The proposal so made, being delivered to the Secretary, will be submitted to the Council, who, on approving the qualifications, will determine the class for which the candidate is to be presented for ballot at an Ordinary General Meeting.

The following are the rates of contribution to the funds :—

	Annual Subscription.				Admission Fee.		
	£	s.	d.		£	s.	d.
<i>Student</i>	1	1	0	.	—		
<i>Associate</i>	2	2	0	.	3	3	0
<i>Professional Associate</i>	2	2	0	.	3	3	0
<i>Fellow</i>	3	3	0	.	5	5	0

No person can become a Member (other than an Honorary Member) of the Institution, unless and until he pays as his first Subscription to the Institution, in the case of becoming a Fellow of the Institution, the sum of Eight Guineas, in the case of becoming a Professional Associate of the Institution, the sum of Five Guineas, and in the case of becoming an Associate of the Institution, the sum of Five Guineas.

All Fellows, Professional Associates, and Associates, are required, within twelve months after their election, to deliver to the Council an original Paper on some subject connected with the profession, or to make a donation to the Library or Collection.

The affairs of the Institution are under the management of a Council, which is elected annually, consisting of a President, four Vice-Presidents, eleven Fellows, one Professional Associate, and two Associates.

The Session of the Institution commences annually on the second Monday in November, and continues to the end of May. The Ordinary General Meetings are held on every alternate Monday during the Session. At these Meetings original communications are read on some professional subject, and their merits fully and freely discussed. Every Member has the privilege of introducing one visitor to these Meetings. Members are entitled to a copy of any printed publication issued by the Institution after their admission.

THE OPENING ADDRESS

BY

ELIAS PITTS SQUAREY, PRESIDENT,

AT THE ORDINARY GENERAL MEETING OF

THE SURVEYORS' INSTITUTION,

NOVEMBER 12TH, 1888.

GENTLEMEN,

I offer you my sincere thanks for the honourable position to which I have been elected.

Deeply sensible of the important duties attaching to the office, I am fortunate in possessing the example, for my guidance and inspiration, of the distinguished men whose names adorn yonder panel.

The opening of each Session affords the President an opportunity of applying the honoured and useful custom of taking stock as it were of the progress, whether material, moral, or numerical, of our Institution, which, with pending elections, numbers 1,370 of all classes, made up of 13 Honorary Members, 810 Fellows, 353 Professional Associates, 91 Associates, and 103 Students.

I should not, in ordinary course, have referred to the success of the examination system and the gratifying proofs of its appreciation by the profession were it not for the recent article in the *Nineteenth Century Magazine*, which implies that the whole system of public examinations has failed in the results anticipated. Many of the eminent gentlemen whose signatures are appended have, apparently, retired from their early and sanguine expectations. I gather, however, that the article is principally aimed at

examinations of a scholastic and unpractical type, and those into which the principle of competition largely enters. Our examination system, at any rate, is not open to the charges set forth in this formidable indictment. It is kept down to a reasonable standard, the principle of competition enters into it in a very limited degree, and a careful line of demarcation is drawn between theoretical branches of knowledge, such as a young surveyor may easily acquire, and the more practical points depending upon actual experience, and which are confined to the higher examination. These few words of explanation are desirable in view of the attack on the system of examinations, which, in unfriendly hands, may be used as a weapon by indiscriminating opponents of examinations generally.

The Library includes some 4,000 volumes, and is growing so rapidly that the question of largely increasing the shelf-room will have shortly to be dealt with by the Council.

Again, if we turn to the publications of the Institution, we have reason to be profoundly satisfied with what has been accomplished. The twenty volumes of the "Transactions," to which the Papers of the last Session are a most valuable addition, and the two volumes of the "Notes," constitute a professional literature of the greatest interest and utility. The purposes which the latter publication is intended to subserve are quite distinct from those of the "Transactions," and its utility will be in exact proportion to the number and variety of the contributions. A glance at the index of the last volume of "Professional Notes" will show the multiplicity of subjects upon which information is supplied, and I appeal to the Members to continue to support this branch of our activities by contributing to the "Notes" any information of interest which may come under their observation, and by using them as the medium for obtaining information from the most experienced Members upon points on which doubts or difficulties arise in the individual mind.

It will be observed that nearly all the questions in Section III. of the "Notes" have been promptly and satisfactorily answered by other Members over their own signatures.

Chief and latest of the developments of the energy of the Institution is the system of Provincial Committees. It is too early to forecast results, but it is gratifying to the Council to find that the cautious steps which they have taken in this direction are meeting with unanimous approval in those districts where Committees have been established. Should the expectation of the Council prove to be well founded, that these Committees are a means of widening, strengthening, and consolidating the Institution in the Provinces without impairing its homogeneity, other counties or areas will be similarly organised; but it is desirable to emphasise the conclusions of the Council, that the movement is tentative, and that its future extension must depend upon experience of the working of these first early efforts.

To further test the value of the new machinery, it is proposed to hold a Preliminary Examination in Manchester in January next. The Fellows of this Institution will second my hope that the Members of the Lancashire and Cheshire and Northern Counties Committees will do their utmost to make the Examination a success.

Without departing from a comparatively unobtrusive policy (which, perhaps, may explain the scarcely sufficient numerical representation of the Institution in the North of England), it may be well to remind those of our profession who have not already joined us, that the period when the passing of an Examination becomes an essential condition of Membership is fast approaching. The door will, however, remain open for some time longer for the admission of surveyors of maturer years and experience. May I press upon our Fellows the duty of endeavouring in the interval to induce every really-qualified surveyor in their neighbourhood to become a Member of an Institution which, far more

than any other, represents the many branches of our many-sided profession, and which will be powerful in proportion to the completeness of its representative character ?

This, then, is our story during the 20 years' life of our Institution.

But who can measure the pleasant experiences to us all growing out of our relations with and through this Institution and its Members ? Friendships formed, some of which have lasted, and others which will, let us hope, last till death ; increased and increasing esteem, not only for the ability and character, professional and social, of those with whom we are associated, but a sincere appreciation of the innate good that lies deep seated in the nature of men which, but for these close relations, would probably never be known or realised. Let us trust that we may indulge a reasonable pride in this pleasing retrospect without lapsing into an enervating reliance on the past of our Institution ; let it rather stimulate us to increased usefulness for good.

The lamentable gloom still surrounding land matters, whether for investment or occupation, demands consideration, and calls for some comment from me in this Opening Address. The cause lies, in some opinions, in the withdrawal of protection from agricultural and other branches of British industry ; according to others, in the increased and increasing facilities of production abroad, coinciding with a recognised permanent lowering of the cost of transit of all commodities from the area of production to British ports. Others, again, regard the currency, as affected by the decreased production of gold, and, consequently, by the lowered value of silver, of the Indian rupee, and the Russian rouble, as being a very important factor in the fall of the prices of all commodities, which with scarcely an exception has obtained over the whole world—in countries where duties are levied for fiscal or protective purposes as well as where all produce enters absolutely free. Apart from the lowering of the prices of

cereal produce generally, which has gravely affected the selling and investment value of land, this value has been further lessened by the tendency of legislation, in these latter days (though not, fortunately, in all cases successfully), to impose further charges on real property for public or *quasi* philanthropic purposes. Concurrently with this is a more or less formulated dread, on the part of investors, of yet further interference not only with the enjoyment of property, but almost with its reasonable control, thus tending to place the owner in the position of scarcely more than a mere rent-charger, and by so doing destroying, or at least impairing, that deep sense of responsibility which has so usefully and pleasantly governed the relations between the landowner and those, in their various relations, employed in the cultivation of land.

It is difficult, if not impossible, to measure or apportion these various influences, but their united force has brought about conditions which are most lamentable to a large proportion of our population. As yet the cloud has not lifted, but, on the other hand, through the hardening of prices of wheat, sheep, and cattle, there are some hopes of a brighter state of things. "I have been young and now am old," and well remember, as a boy, sitting at the feet of my elders, who foresaw ruin and desolation imminent at a time when, with exceptional intervals, this great Empire had entered on a career of material prosperity, civilisation, and beneficial legislation of which the world as yet has seen no counterpart.

To those amongst us whose business mainly lies in the sale of landed property, the past year, if less unsatisfactory than its immediate predecessors, still exhibits a wide disparity as regards the volume of business when compared with the period 1865 to 1875. The same depression attends that almost special province of our profession, the adjustment of compensation claims under the Lands Clauses

Consolidation Acts. With returning prosperity, this element of professional life will, no doubt, be revived. Those of our body whose duties are more directly connected with the management and agency of land will, probably, endorse my conclusion, that, as yet, there is little, if any, improvement in the disposition of tenants to take arable farms of average or unattractive character or of exceptionally large area. Their faith in any rebound in prices of cereals has been so rudely shaken, the amount of capital lost during the interval since 1879 has been so great, and even under permanent readjustment of rents on greatly-lowered terms, the profits under current prices have been so moderate and uncertain, that new capital and new men have not been generally forthcoming.

The gravity of the issues at stake may be measured by a recent utterance of a learned Professor (to whose writings I refer hereafter) who cannot be charged with an undue partiality towards one, at least, of the interests in landed property. He says :—"The success of agriculture measures " the extent to which other industries than agriculture can " subsist, or, generally, other persons besides agriculturists " can live ;" and, " the success of this industry is, therefore, " of profound interest to all, especially when the home " supply is the entire or principal source of maintenance to " the inhabitants of any country. Even when it is not, the " interest in successful agriculture should still be keen, for " the agriculture of a country is the chief home market of a " country."

It is an anomalous condition that whilst capital, as evidenced by the conversion of Consols, is now worth only $2\frac{3}{4}$ to $3\frac{1}{2}$ per cent., land, which for 1,500 years has been regarded as *the* security, is scarcely saleable as an investment to pay $3\frac{1}{2}$ to 4 per cent., unless under special conditions and surroundings.

Reviewing in some detail the suggested causes of and

remedies for this depression, it may be observed that a return to a protective tariff seems to be remote, even if attainable, whilst the marked inclination to reconsider their tariffs by the President and Legislature of the United States points apparently to a disposition to approach a free trade policy. On the other hand, the increased duty on corn levied by France, however ineffectual in restoring prosperity, indicates a tendency to confirm and increase rather than relax her protective system.

The capacity for increased production by the corn-exporting countries is a most interesting problem. Doubtless the area of production is almost illimitable, and cheap and improved access is currently and constantly afforded to the various bases of export; but it is of singular interest to speculate on the varying conditions under which, with these advantages, the area of wheat in the United States seems to have reached its maximum in 1884, and this, too (somewhat significantly), concurrently with a rapidly-increasing home consumption. India, again, pauses in extending her production of wheat (although backed by a premium of some 30 to 33 per cent., in the shape of the lowered value of the rupee), and finds herself competing in our markets with the depreciated Russian rouble, the fall in which is relatively greater than in her own currency.

I had hoped to have referred to the Report of the Royal Currency Commission, but its late publication prevents any attempt to bring before you a short *précis* of the various conclusions arrived at. However, I commend the evidence taken before the Commission to the attentive perusal of all. If only as a mere intellectual contest, between keen and educated minds, over an intricate question, by the examination of banking and commercial experts, it will be found at once interesting and advantageous. I hesitate to bring before the Institution my personal views in regard to this factor in the prevailing depression, but my conviction is

deeply assured that there is a slight but distinct revival in trade and prices, and that this revival is due in some degree (we cannot measure it) to the first faint impulse of the increasing supply of gold from S. Africa and India.

But from this Chair a more defined forecast of the immediate future of land, its application, and its interests may be fairly looked for. Briefly let me state my opinion that tenants of farms of moderate size are coming forward in greater numbers and with more hopeful enterprise than during the late few years. New tenants for farms requiring a capital of £6,000 to £8,000 are still difficult to find. In all cases the takers are exacting in demands and conditions, to a degree outside our old experience. The turn of the market is in their favour, and it is only reasonable that they should use it.

The market for selling land, too, has slightly improved. Areas varying from 2 acres up to 100 acres find purchasers except under special disabilities, not, indeed, at the prices of 1865-1875, but on terms which are certainly an improvement on 1884-85. "*Divini gloria ruris*" operates, as it has operated from the earliest life of humanity, and the ever-present passion for cultivating "mother earth," with all its sweet influences, however it may ebb and flow through the incidents of legislation, commercial and scientific enterprise, and the untold variety of conditions which affect prices, will continue to prevail, and, though it may be on a lowered yet settled basis, will be rewarded by results which, if not affording large profit, may be expected, at least, to bring about the contentment and happiness incident to a country life.

The unfortunate landowner who has charges on his estate may, though he be unable to sell or to find tenants for his vacant farms, find some mitigation of his burdens in the lowered rate of interest on which charges may be raised. The rate which on good landed securities in 1860-1875 was

4 to $4\frac{1}{4}$ per cent. has now fallen to $3\frac{1}{2}$ to $3\frac{3}{4}$ per cent., and, when exceptional margins of security exist, even as low as 3 per cent. But further mitigation may be looked for. The application of a certain proportion of imperial taxation to the relief of local burdens is a justice which may be yet further fairly and judiciously enlarged. The important question of railway rates for carriage must be put upon a more equal and reasonable basis, so that, whether for the carriage of his produce in bulk, or in the lessened form incident to market gardens and dairy farming, the farmer may be put "upon the footing of the most favoured nation."

On one further suggestion I believe I shall have the full sympathy of my audience: that Property Tax Schedule "A," should be levied on rateable value, and not on gross estimated rental, or on an amount varying with the sweet will of the Surveyor of Taxes, as at present. It is clear that the present assessment of Schedule A is on the gross and not on the receivable income—a condition which applies to no other class of income embraced by the Property Tax Assessment Acts.

The legislation achieved or suggested during the past session deserves attention. The most important in relation to land and land interests is the Local Government Act, which received the Royal Assent on the 13th of August. This important and far-reaching Act practically reorganises the whole system of Local Government in England and Wales. Whilst admitting it to be the outcome of a consensus of opinion between the two great political parties of the time, and the logical application of the doctrine that taxation and representation should go together, I may yet be permitted to express an emphatic opinion that the past administration of their funds by the Country Authorities, as represented by Quarter Sessions, is unlikely to be surpassed in economy and efficiency by those who will succeed to these important functions. I am expressing a hope which is shared by everyone

familiar with the subject, that those members of Quarter Sessions who have so ably and honestly discharged their varied duties will not cease from their useful and honourable efforts to maintain a pure and efficient expenditure under the new conditions. It will not be out of order to quote the words of the leading journal upon the passing of this Act:—"It is a great measure, and it has been passed "without wrangling or undue difficulty, because men's "minds were ripe for it. The first volume of a mighty "work and the foundation of a great policy is secure, "and it is for the country now to take up the work of "Parliament, and to carry out the new democratic constitution in affairs which has always been in matters of "self-government one of the best characteristics of the "English people."

The Sale of Glebe Lands Act affords a useful relief to incumbents who cannot let or cultivate their glebe lands. A possible effect of this Act will be to render available for allotments, under the recent Act, a considerable quantity of land in convenient situations.

Besides these, the usual crop of Bills relating to land and subjects incident to land has been introduced, and more or less considered by Parliament. Without unfairly criticising the well-intentioned motives of those Members of the House introducing the majority of these Bills, one can scarcely escape the conviction that if enacted they would for the most part be either futile or mischievous. The exceptions to these remarks (in a list of some 25 Bills more or less relating to real property) are the Government Bill constituting a Board of Agriculture, down for second reading on the 22nd of November, and another which has been withdrawn, entitled the Industrial Agricultural Education Bill, providing for the teaching of agricultural and horticultural subjects in public elementary schools.

The introduction of a Bill constituting a Board of

Agriculture is satisfactory evidence that the Government recognises the need that the greatest industry in this country shall be represented by a special department. The spirit of the Bill seems to be rather to assist, advise, and instruct private enterprise than to stimulate or control it. The opportunity such a department will afford for receiving, concentrating, and distributing information derived from the wide area of its usefulness will be of great service as well to the State as to those connected with agriculture and kindred pursuits.

The Land Transfer Bill, introduced by Lord HALSBURY, is a measure too technical in character for more than general remark; but the report of the Incorporated Law Society, a tribunal well qualified to pronounce an opinion, scarcely indicates approbation of its proposals. The Bill has already been discussed and criticised in the Paper read last Session by our valued Associate, Mr. WILLIS BUND, and it will doubtless receive in Parliament, and generally, much searching criticism at the hands of those who are adepts at so intricate a subject as land title and transfer; but from the surveyor's point of view it seems possible, with the aid of the magnificent ordnance maps of the whole of England and Wales, that some assured basis for the registration of title may be found in these, or in other proposals which may be forthcoming in due course.

As a layman, and admitting that there may be difficulties and considerations which the suggestion may fail to meet, I would ask how far it may be possible that the beneficial ownership of land as evidenced by the receipt of rents, whether such ownership be absolute or fiduciary, may be taken as the basis of ownership, and consequent registration of the areas over which such rent accrues. It is now readily possible to define the boundaries of such ownership on these maps. And the experience of the Fellows of this Institution will probably confirm my view

that it is only after a dispute, with all its acerbities, has arisen on some minor issue, that the question of a boundary gives rise to any real difficulty of adjustment. In this view ownership would exist subject to the disabilities of mortgages, jointures, charges to younger children, &c., during their respective terms, and might form part of the title to be registered subject to such charges. Under Lord SELBORNE'S Act, in 12 years the ownership, thus defined, would become absolute.

The Land Charges Registration and Searches Bill, promoted by the Incorporated Law Society, is a useful measure, intended primarily to cure defects in the Acts of Parliament relating to registered judgments and executions, and to protect purchasers against statutory charges for moneys advanced for land improvements, unless such are registered at the central office. It is claimed by the promoters that this Bill will in no degree impede, but rather facilitate, the registration of land under any system of land transfer.

There are also two Tithe Rent-Charge Bills introduced by the Government, and brought down from the Lords, standing for second reading on the 15th November. One of these is to enforce the 80th section of the Act of 1836; the other proposes to limit the power of distress to obtain payment of arrears due and substitutes an order to be obtained from the county court judges out of the rents and profits arising not only from the lands on which the charge arises, but from any other lands in the same parish occupied by the same tenant or owner. The county court judge will appoint a receiver, but no personal liability against the owner or occupier will be created, nor can the lands be sold.

Another important clause gives the county court judge power to mitigate or remit charges due, on proof that no profit or sufficient profit has been made. The tithe-owner may object to such remission of charge, and demand posses-

sion of rents and profits on lands. After notice that the tithe is in arrear, the amount is to be paid by the occupier, and may be deducted from the rent due to the landlord. This new and important function to be borne by the county court judge is perhaps too grave, unless, in cases of amounts over £25, appeal be allowed. A further clause is for the calculation of tithe rent-charge on a triennial instead of a septennial average of prices.

Now let me refer to Bills, some of so unreasonable a character that their withdrawal must almost have appeared to be a foregone conclusion to those introducing them. Of this character is a Bill to amend the Agricultural Holdings Act of 1883 by repealing the 3rd and 4th sections. The operation was to dispense with the landlord's consent to any improvements under the 1st or 2nd parts of the 1st schedule of the Act of 1883, and to confer an indefeasible right to compensation on tenants for all alleged improvements not positively injurious to the landlord.

The Glebe Lands Occupation Bill, an honest and useful Bill, has passed the second reading, and has for its object the amendment of the general law affecting incumbents holding glebe lands in their own occupation, and confers on them or their representatives, on resignation or death, compensation for moneys expended in the cultivation of such land, and giving the representatives an option of holding over the glebe lands at a rent based on poor-rate assessment for six or twelve months; or, if this option is not exercised, a right to compensation for growing crops and unexhausted improvements included in the 3rd part of the 16th schedule of the Agricultural Holdings Act, 1883.

The Small Holdings Bill of Mr. JESSE COLLINGS amplifies the classes who may avail themselves of the Allotment Act of 1887, with the scarcely prudent addition that the sanitary authorities' compulsory powers are to extend not only to purchasing, but to leasing land for a term of five

years, renewable as the authority may choose. It may be of some interest to state that my fairly wide experience of the increased area and number of allotments during the past two years is certainly satisfactory.

The Leaseholders' Purchase of Fee Simple Bill, brought in by Mr. LAWSON, grows out of the inquiry of the Town Holdings Committee.

A Bill, introduced by Mr. SHAW LEFEVRE, for the Better Protection of Footpaths and Roadside Wastes, completes the list of Bills dealing with details rather than principles, which, in my humble opinion, is too characteristic of recent legislative effort. In connection with this too frequent desire to subordinate principles to details in legislation, I shall be forgiven, I hope, if I make permanent in this Address an illustration given by our eloquent and ever-lamented Past-President, E. J. SMITH. Sitting on a Committee of the Council of which he was Chairman, dealing with the clauses of the first Agricultural Holdings Bill, I was attempting to define the items to which the principle of compensation might fairly apply. "My dear 'SQUAREY,'" said he, "never define. Moses said 'Thou shalt not steal.' If he had said thou shalt not steal apples, thou shalt not steal turnips, thou shalt not steal money, he would have required a quarry of stones for his tables." So Mr. SHAW LEFEVRE, in Clause 9 of his Bill, recites:—

"If any person, not having a legal right to do so, for purposes of sale or gain, or from malice, uproots or destroys any wild ferns, wild flowering plants or other wild plants not being noxious weeds growing on any roadside waste or common-land, he shall, on summary conviction, incur a penalty not exceeding 1s. for every plant so uprooted or destroyed, but this section shall not apply to persons gathering mushrooms." It is a little hard that this favourite esculent should be placed outside the pale of the law.

Two Rating Bills were introduced during the Session. One, on the Rating of Machinery, has been discussed and criticised in the 20th volume of our "Transactions." It was subsequently withdrawn. The other, of larger general importance, "The Agricultural Tenancies Rating Bill," proposes to divide the payment of rates between the landlord and tenant, as on the Scotch and Irish systems. In view of the representative character of the new Rating authorities this proposal has scarcely a *locus standi*. This Bill is down for second reading on the 14th of November.

A Committee of the Institution devoted some attention to the Metropolitan Board of Works Local Management Bill, and were prepared with some suggestions for its amendment. The Bill, however, was withdrawn.

A Bill to amend the Copyhold Acts has passed the House of Lords, has been read a second time in the House of Commons, and is down for Committee on the 13th of November. It originally suggested that enfranchisement by agreement under the Copyhold Acts should be carried out by a memorandum to be entered on the Court Rolls. Its scope has since been extended to allow the lord to work minerals reserved on enfranchisement, the compensation being adjusted, if necessary, by the Land Commissioners.

Two Bills relating to buildings deserve notice. One, regulating the general line of frontage, applicable to existing as well as to future buildings, has been recommitted. The other, the Buildings Metropolis Bill, applies only to London, and vests a power in the Home Secretary, pending the election of the London County Council, of restricting the height of buildings in existing streets. This restriction is obviously suggested by a case which led to some debate in the House of Commons during last Session.

I conclude this tedious *résumé* with a mere reference to the so-called Architects' Registration Bill. The action taken by this and other Institutions to defeat this ill-considered

measure and the fate which befell it are matters of recent recollection.

The literature affecting land during the past year has been of an important character. MR. BEAR'S Book, "The British Farmer and his Competitors," contains a vast fund of information and research, and, based thereon, he arrives at conclusions pointing to the improbability of the present low prices of wheat being permanent. He further deals in a somewhat trenchant fashion with the question of tenant right for improvements of the largest and most comprehensive character. His views deserve attentive consideration, and it is possible that a *modus vivendi* may be found on the lines of his suggestion which may be of most useful application.

"The Pioneers and Progress of English Farming," by MR. PROTHERO, gives a most luminous and instructive description of land tenure, cultivation, and the causes influencing prices from the earliest period of our history. It teems with references to authorities and the sources of the widespread information and generally sound conclusions which his reading and experience have enabled the author to summarise in a most readable and valuable book. But any account of the literature in relation to land would be absolutely imperfect did I not refer to the "Economic Interpretation of History," by Professor THOROLD ROGERS, delivered as Lectures, in his capacity as Professor of Political Economy, at the University of Oxford. They embrace an amount of original thought, comparison, and analysis of the work and experience of the great writers and thinkers on Economic subjects, combined with almost unequalled powers of illustration, which renders this book a most important and valuable addition to the wealth of literature on this and cognate matters.

Death has been busy amongst our Fellows, and we have to lament the loss of two Past-Presidents, MR. SMITH-

WOOLLEY and Mr. I'ANSON, who each in their special departments of our profession were of the highest repute and standing. Their genial and kindly disposition endeared them to us all. We have also lost Mr. COLEMAN, of York, a most competent writer on Agricultural matters, Mr. SHERLOCK, of Liverpool, and our Honorary Members M. GILLET, President of the Société des Géomètres, and M. DERIVRY, one of the most eminent Members of his profession in France. These two gentlemen were untiring in their exertions to make pleasant the visit of the deputation from the Surveyors' Institution on the occasion of the Paris International Exhibition of 1878.

Let me conclude by asking your patient forbearance, during my term of office, for the many failings and shortcomings which may be apparent in my discharge of the honourable duties which attach to the Presidency of this Institution.

Mr. JOHN SHAW (Fellow) had great pleasure in proposing a vote of thanks to THE PRESIDENT for his excellent Address. Most of the Members present had known Mr. SQUAREY, either personally or by reputation, for a great number of years, and he was quite sure that all would agree that the Address was only such a one as they might have expected from so great an authority. He felt certain that such an Address would not be without results most beneficial to the Institution.

He was glad to observe that THE PRESIDENT had taken a somewhat hopeful view of the prospects of agriculture. He (Mr. SHAW) was very deeply interested in the subject, and could only express a hope that by the time THE PRESIDENT's term of office expired he would be able to congratulate the Institution on the realisation of his anticipations.

He would venture to emphasise THE PRESIDENT's

reference to the "Professional Notes," which formed such a useful supplement to the "Transactions." He considered the "Notes" to be of very great use to the Institution, and he would ask every Member to support THE PRESIDENT'S recommendation and contribute to them as largely as possible, thus making them of even greater interest than at present.

MR. A. M. DUNLOP (Fellow) begged to second the vote of thanks to THE PRESIDENT for the very able Address he had delivered. He would make no comment upon that Address, but would ask Members to study it thoroughly, for no man was more able than Mr. SQUAREY to deal instructively with all matters affecting the surveyor's profession, and no man's words were more worth thoroughly studying and digesting.

THE PRESIDENT desired to tender his most sincere acknowledgments of the kind manner in which the vote of thanks had been proposed, seconded, and received by the Meeting. He earnestly hoped that his year of office might be, as Mr. SHAW had suggested, distinguished by an increase of prosperity for agriculture, which, he thought, meant a rise of spirits to most of those present. Should this be the case, he should esteem himself the most fortunate of the many fortunate Presidents who had preceded him in that chair.

The Meeting then adjourned.

THE MAINTENANCE OF MACADAMISED ROADS.

BY W. HEWITT (PROFESSIONAL ASSOCIATE).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION, November 26th, 1888.*

MR. ELIAS PITTS SQUAREY (PRESIDENT) IN THE CHAIR.

THE PRESIDENT informed the Meeting that a letter had been received from the author of the Paper expressing his regret that he was prevented by circumstances beyond his control from attending the Meeting; the Secretary would therefore read the Paper for him.

This Paper was written and deposited with the Institution in the early part of 1884, and, with the exception of the addition of a few remarks on drainage and a paragraph on extraordinary traffic, remains in its original form.

Since writing it I have had the pleasure of reading Mr. BURROWS' very able Paper on "Roads," and am pleased to find that we agree on so many points.

Road Maintenance is a subject to which comparatively little attention has been given in this country, although it is one of great importance, involving, as it does, inclusive of the Metropolitan macadamised roads, an annual expenditure of nearly £4,500,000.

In the early part of the last century the roads were little more than cart-tracks, on which, when they got in a very bad condition, a quantity of stone of various sizes was placed

indiscriminately and left to itself to work in. Of course a road maintained in such a way as this was always in a bad condition, except when the stone was newly put on, and then it was too rough and uneven for the traffic to pass easily over it. In some districts where stone was scarce the road would be mended in the autumn with brushwood, mud, &c., with a layer of stone on the top, but in a short time this road, especially in wet weather, became in a much worse state than before.

The method of making a new road was to dig a trench of the required width and deposit a layer of large stones in it and another of small on the top of them. This was left to itself and allowed to consolidate in the best way it could. The thickness of these layers varied according to the idea of the surveyor, and, as he was generally a man possessing no experience of road making or maintaining, it was not to be expected that he would know anything about the work he had to superintend. Things went on in this way until the establishment by law of Turnpike Trusts. But it appears this did not do much good. The trusts were in short lengths, sometimes not more than 20 miles, and the surveyors were no better than before, as they were more frequently appointed by favour than for any qualifications which they possessed for the office.

This state of things continued until the time of MACADAM and TELFORD (about the commencement of the present century), when great improvements were made; the stone was broken to a more uniform size, and greater attention was paid to drainage. MACADAM's principle was "to put broken stone upon a road which shall unite by its own angles so as to form a solid, hard surface," and this by universal experience since has been allowed to be correct. He also contended that no greater convexity should be given to the cross section of a road than was necessary to carry off the surface water

into the water-tables. He did not agree with TELFORD in one important particular, namely, that a road should have some sort of hard foundation, either a rough hand-set pavement, or a layer of rough stone or gravel for the broken stone to be placed on, preferring to lay the metalling on the formation surface. Experience, however, has since shown that TELFORD's method was the right one. A great deal has been said about the disagreement between these two eminent men on this particular subject, but it is very evident that they agreed in a great deal more than they differed; and it is by a combination of their methods, united with recent improvements, that the best roads are now made and maintained.

In laying out a new road the general lines must always be controlled, more or less, by the surface formation of the locality. Cuttings and embankments should be avoided as much as possible, owing to their great expense, and when unavoidable the work should be so arranged, as far as possible, that the soil removed in cutting can be used for the embankment.

It is essential that the foundation of a road should be thoroughly drained, whether it has a paved bottom or not. This is usually done by ditches on each side of the road. They should be from two to three feet below the level of the surface of the road. They are sometimes on the land side of the fence and sometimes on the road side; but it is preferable to have them on the latter, as the roadmen can more easily get at them to clean them out, and it also gives a greater width between the fences, which is a great aid in drying the road, as the air has freer access to it. When the ditches are on the land side of the fence, in most cases they belong to the owners of the property, and the occupiers are supposed to clean and scour them, which there is sometimes great difficulty in getting them to do. When they

are on the road side there should be, unless there are footpaths, and when the width will allow, sod borders between the metalled portion of the road and the side ditches, with outlets cut at short intervals to lead the water away from the surface of the road. In some parts of the country great objection has been made by some members of Highway Boards to sod borders, and they assert that their formation causes greater expense in the maintenance of the road. This, however, is an error: they may be formed and maintained very inexpensively, and it does not cost nearly so much for trimming the edges and cleaning the outlets as it does to clean the sides of a road by stocking up the weeds and grass. These always accumulate where, as on most country roads the whole width is not used, and where there is no sod border there is always great expense caused by these operations, which injure the road by admitting the wet, besides being very unsightly; whereas the sod border, when properly kept and trimmed, adds to the appearance of the road and facilitates the flowing away of the surface water. It should be from four to six inches high, as this would not be high enough to endanger vehicles, and yet high enough to keep anyone from driving into the ditches in the dark. Where there are many houses on the sides of the road it becomes necessary to have a footpath, and this should be formed over the side ditch, as it is always better to have a drain under the footpath than under the road. In such a case it is always best to lay some kind of kerbing and channelling at the side of the road, the nature of which must be determined by the locality, as when once down it costs less in such a situation to keep clean than anything else would. Small drains communicating with the underdrains should be carried under the footpath at intervals so as to carry off the surface water.

All side ditches, outlets, borders, &c., should be

thoroughly cleaned out and trimmed in the autumn, and gone over again, where necessary, in the spring. If this work is done in the summer it causes a great deal of useless trouble and expense, as the grass and weeds then grow so rapidly, necessitating the doing of the work over again.

In addition to the side drains, cross drains are necessary in most cases so as to thoroughly drain the centre of the foundation of the road: these are usually pipe drains, and should communicate directly with the side drains, the fall from the centre to the sides being from 1 in 80 to 1 in 100. In districts where stone is plentiful, box drains are generally used, as being much cheaper. They are of square section, and are formed with flat stones for the top and bottom and stone sides. The great advantage of these drains is that they can be so readily opened for cleaning by taking off the top stones. Sometimes it is advantageous to construct mitre or V drains; they are formed as ordinary drains, but in the shape of a flat V with the centre uphill. In many instances a cheap and effective drain may be formed by cutting a trench about a foot square in the formation surface, and filling it with large rough stone. The intervals at which these drains should be placed must depend on the nature of the subsoil and the quantity of water in it. With a clay subsoil they must be at shorter intervals than in gravel or sandy soil. Where there are footpaths, catch-pits or gullies must be used for the surface water, and should be connected directly with the cross drains. Any springs that may make their appearance must be immediately tapped and led away to the side ditches. With a good system of cross drainage, there is no advantage in constructing longitudinal drains immediately under the water-tables in addition to the side drains.

On roads which are formed on sidelong ground and benched into the hillside it is nearly always necessary to

have a drain in the side of the hill above the road, to keep the land water from the road, but the form of this must be determined by local circumstances. A very common and inexpensive way is by cutting a deep trench and filling it with large stones. Whatever system may be adopted in such cases the drains should be connected, at intervals, directly with culverts, so as to convey the water under the road and away from the upper side as quickly as possible.

In many instances, particularly in hilly districts, no outlet can be found for the water on one side of the road. In such cases provision must be made for conveying it under the road at intervals, by means of large drains or culverts. These are usually pipes of large diameter, or may be large box drains with the walls either built dry or with mortar; the larger ones being generally built with brick or stone walls and with a turned arch similar to a bridge. In all cases an invert should be formed, either by an inverted arch or a flat pitched invert, or the walls would be rapidly undermined by the water. Barrel culverts, of circular section and built of bricks, are now rarely used.

It will sometimes be found necessary to go to considerable expense to thoroughly drain a road, but in the end it will always be found to be most economical to do so, as a wet undrained road is always most expensive to keep in good order.

All underdrains and culverts, unless of very large size, should have an iron grating at the entrance, to prevent their getting choked with the rubbish which is always brought down at the commencement of a storm.

It is essential that the cross-section of a road, when completed, shall be such as will allow the water to flow freely off it; yet care must be taken that it is not too round, or else the traffic will always keep to the centre and form ruts, which will retain the water, and thus cause great

damage to the road by soaking into and thereby weakening it. The best form for general purposes, I believe, for the cross-section, is an arc of a circle, having a fall of 1 in 30 from the centre to the sides of the road.

A road should never be quite level longitudinally, or the water will stand in the gutters instead of flowing away freely; so that, even on quite level ground, it is better to go to a slight expense to obtain such a fall as will enable the water to get away easily.

Steep gradients should be avoided where possible. No road should ever be made with a gradient steeper than 1 in 30, but 1 in 50 is much better for general purposes, especially when practicable without much greater cost, for the after expense of maintenance will be much less.

Great damage is caused to a road by the feet of the horses when drawing heavy loads uphill and also by the drags on vehicles descending, by causing a disintegration of the surface. Much injury is frequently caused by water scouring the surface of a hilly road, sometimes the whole coat of surface metalling being swept away.

When a road is formed by being benched into the hillside, a retaining-wall is frequently needed to prevent the earth falling on to it. When the cross-section of the road is formed partly by cutting into the hillside and partly by an embankment, a retaining-wall will generally be needed on the other side also, and below the road. The section and strength of these walls must always vary very much, and must altogether depend on local surroundings and requirements.

The width of a country road should never be less than 16 feet of metalled surface. On a road where there is great traffic the width should be such as will readily accommodate it, and, within certain limits, the wider a road is in proportion to the traffic the less it will cost to keep in good order.

The formation surface of a road, when the drainage is completed, should be well rolled, so as to consolidate it, before the foundation is laid on it; the foundation is usually, in the case of streets or roads with heavy traffic, a pavement of rough flat stone set on edge and formed to the same cross-section as the road will have when finished, the interstices being filled with small pieces hand-set with a hammer.

Sometimes it is of concrete formed to a similar cross-section. Cinders and slag form a very good foundation when obtainable, as does coarse gravel. In some districts, where stone is scarce, burnt clay is used; but for ordinary roads the foundation is most generally formed of rough stone, often of spalls from the nearest quarry.

Whatever the foundation is it should be well rolled before the surface metalling is laid. Oftentimes the metalling is laid direct on the formation surface. The generality of existing roads are formed in this way, but it is not well to do so if it can be avoided, and the practice is much to be condemned. In some cases, when a road is made on wet, boggy ground, a layer of fascines is laid first, to form a firm foundation, and then the road is formed on it; but unless the nature of the ground is such as will always insure the fascines being kept in a wet or damp state they will soon rot, and the road will go to pieces. Therefore they should never be used unless under unavoidable circumstances.

In some districts the foundation is formed of chalk; but this should not be used unless it can be thoroughly protected from the action of wet and frost, owing to its power of absorbing water, which causes it to turn into mud in wet weather, and to blow up in frost. Stiff clay is a bad foundation, owing to its great contraction in dry weather and expansion in wet.

When the foundation is laid, whatever course may be adopted, the metalling, if more than four or five inches in thick-

ness, should be laid in two layers, each rolled separately, if rolled, as is frequently the case, with a heavy roller only. When two rollers can be used, one light and one heavy, the better course will be to roll it all in one layer, passing the light roller over first, and finishing with the heavy one. The top layer, when partly consolidated by rolling, should have a binding material laid over the surface and rolled in with the metalling to form a compact mass, and while this is being rolled it should be well watered. It is better, in making a new road, to roll the surface, although the metalling is left in many places to consolidate by the traffic; for, in such a case, a great deal of material is wasted by grinding and crushing, besides causing great inconvenience to the traffic, and the metalling also wears round and takes a long time to set.

Rolling is only necessary in the case of new roads, or when a thick coat of metalling is laid. When a thin coat is rolled the roller generally smashes a great deal of the stone, which would not be the case if it were consolidated by the traffic. Steam-rolling is better and more economical than horse-rolling, as it more thoroughly and quickly consolidates the metalling. With a heavily-weighted horse-roller the stones are much displaced by the horses' feet, in consequence of the great exertion necessary to draw it. Horse-rollers are very unwieldy in use, and are now seldom used anywhere.

When rolling is resorted to in repairing a road, it is sometimes necessary to stock the surface of it. This should not be more than half an inch deep, as deeper than that displaces the old metalling and increases the cost, with no corresponding advantage. The metalling should be carefully spread and of a uniform thickness, and the binding material applied when about half rolled. The binding is very often applied too soon, and in too great a quantity, the consequence

being that the road is soft and muddy, and does not get firm until the superfluous small stuff is squeezed out and removed in the form of mud or dust by continued scraping and sweeping. The proper quantity of binding material which it is necessary to use is, in my opinion, as little as possible. Clean, sharp sand, or fine gravel, is generally used as a binding material, but, as nearly all stone where rolling is resorted to is broken by machinery, I think the screenings from that are much the best material for such a purpose, and being of the same nature as the metalling will unite with it and form a close hard surface much better than with sand or gravel, which are of a foreign nature, and, not being angular like the screenings, will not set so readily. With a silicious material, limestone screenings will cause it to set better than anything else. In all other cases the screenings should be of the same material as the road metal. When using a binding material the fact is too often lost sight of that it is only intended to fill up the interstices between the larger stones, and when more than sufficient for this purpose is used the bad effects before mentioned always ensue. There is no economy in repairing a road with thick coats, and rolling, unless the traffic is very considerable, although there is a great deal more comfort to the public, owing to the easier draught; there will, moreover, be much less wear and tear of vehicles.

A weak road should not be rolled, as although the weight of a 15-ton steam roller is very evenly distributed over the surface, and the weight is not great per inch of width, it would be likely to be very injurious to the road, owing to causes which will be mentioned further on.

When once a road is coated and rolled it is too often the case that it is left to take care of itself, except for scraping and sweeping, until it requires coating again. For some time before this is done the surface is covered with

depressions, which are frequently of such a depth as to be dangerous. The coating would generally last much longer if, as soon as any hollow made its appearance, it were filled up with small-sized metalling. A proper system of repairing by small patches will in all cases result in a great saving.

One of the great causes of slacks or hollows appearing in the surface of a newly-rolled road is that the metalling has not been uniformly spread. When they appear during rolling, they should be filled with metalling broken to a rather smaller gauge than the rest. The road should be carefully watched after the rolling is completed, and, if any hollows should appear then, they should be immediately covered with small patches of stone. Stone for patching should always be broken to a rather smaller gauge than for coating. Too great stress can hardly be laid on repairs by patching—a matter very imperfectly understood by a great many highway surveyors, and in some towns never practised at all. Roads and streets have come under my notice where little or nothing is done to them until they require coating, and so coat after coat has been laid until the top metalling is 12 to 15 inches thick on roads with only light traffic. By this means, the roads have been so raised that they are in the centre considerably above the level of the side-walks, and have a sharp and frequently dangerous fall towards the sides.

The materials used for road-metalling must of necessity vary very much according to locality. Owing to the cost of haulage, local stone must generally be used, especially if the traffic be only moderate. If, however, the traffic is heavy it will sometimes be found better and more economical to obtain a better material, even at a higher cost; and, in cases where the traffic is very great, the best material that can be obtained is the most economical. In some cases the better material may be used on those parts of the

road where the traffic is greatest, and, in other cases, in the centre of the road only.

A good road metal should be hard and tough, and if it has a certain amount of binding nature in it so much the better. It should also be able to withstand the influences of the weather. These qualities are seldom found together; as igneous and silicious rocks, although frequently hard and tough, do not consolidate so well nor so quickly as limestone, owing to the sandy detritus formed by the two first having no cohesion, whilst the limestone has a detritus which acts like mortar in binding the stones together. A stone of a good binding nature will frequently wear much better than one without, although it is not so hard. A limestone road of good cross-section will be more impervious to wet than any other, owing to this cause, and will not disintegrate so soon in dry weather, owing partly to this and partly to the well-known quality which all limestone has of absorbing moisture from the atmosphere. The limestones are generally not hard enough for roads with very heavy traffic, where hardness and toughness are of more consequence than any other properties. For such roads the best materials are some of the granites, such as Guernsey, Penmaenmawr, and Cornish; Clee Hill stone, traps, basalts, whinstones, and some of the silicious rocks. For roads of moderate traffic the best are the harder limestones and a hard sandstone sometimes found in the coal measures. Iron and copper slag are sometimes used, but, although very hard and tough, have no binding property at all, and the edges of the pieces when broken are so sharp as to cut horses' feet very badly. In some parts gravel is used very largely for road metal. It should be well sifted from small material, and the large stones broken down to the proper gauge. Field stone and river stone are much used in some districts, but generally make a rough road, as they are composed of the hardest

parts of those stones which have resisted the action of the weather, and are, though frequently very hard, of unequal hardness, so that they wear very irregularly. Mere hardness without toughness is not of much use, as a stone may be very hard but so brittle as to be crushed to powder under a heavy load, when a stone not so hard, but having a greater degree of toughness, will be uninjured.

The size to which surface metalling is generally broken is such that a stone in its largest dimensions will pass easily through a ring either of $2\frac{1}{2}$ or $2\frac{1}{4}$ in. diameter. For roads where the traffic is light it may be advantageously broken smaller, as it will then cover a larger space, consolidate much more quickly, and make a smoother surface. When the material is rolled it need not be broken quite so small, as when it is set at once by rolling it is an advantage to have a rather larger stone, as it makes a stronger road. Great care should be taken in the preparation of the material, so that the stones shall not be long, flat, or flaky; the small stuff should not be screened from it when hand-broken, as there is generally no more than what is useful. All clay and dirt should be separated from it, except in the case of gravel, when a certain proportion is necessary, for if gravel is too clean it will not set for a long time, owing to there being so many round stones in it. The stones should, within certain limits, be kept as nearly as possible of a uniform size and a cubical form, as they then make a better and more even road.

Stone broken by hand is preferable to that broken by machinery, as machine-broken stone is not so durable as hand-broken. When broken by a machine it is always crushed to a certain extent by the jaws, and therefore does not wear so well, especially under heavy traffic; but when a machine can be kept in constant use it is often cheaper, especially if the stone is very hard: with some hard stones

the cost will often be found to be only about half that of hand-breaking. A hard stone which is not tough and some of the softer stones will be crushed to powder by a machine. Machine-broken stone is also frequently very flaky which is a great disadvantage in setting.

In stone broken to a gauge of $2\frac{1}{4}$ inches the proportion of solid is 55 per cent. to 45 per cent. of void ; therefore, taking the average weight of a cubic foot of solid limestone to be 170 lbs., the weight of a cubic yard of broken metalling would be 1 ton 2 cwt. 2 qrs. 4 lbs. This, when consolidated, would weigh nearly as heavy as the solid stone—in fact, a cubic foot of consolidated road metal weighs on an average from 93 to 95 per cent. of an equal bulk of solid stone ; therefore, it takes $1\frac{1}{2}$ of broken material to form 1 of road, or, in other words, when the metalling is consolidated, it occupies two-thirds of the space it did before.

The interstices in the road coating are filled with small stones and mud ; these form a great portion of all roads. In a consolidated road the amount of metalling over $\frac{1}{3}$ ths of an inch varies from 20 to 55 per cent., and the mud from 20 to 25 per cent. ; the remainder consists of small stone which is very useful in the road. In a road freshly coated, of course the proportion of large stone would be greater. Generally speaking the road which contains the greatest quantity of large stone will be the best ; but sometimes such a road, from having an ill-drained foundation, will be very weak, and large quantities of stone may be put down without materially strengthening it, and the stones will always work about in wet weather. An excess of mud should not be allowed to accumulate, as few things tend to weaken a road so much ; any road containing more than is absolutely needful should be constantly scraped until it is reduced to the proper quantity.

The chief causes of wear on roads are the action of the

traffic and the action of the weather. The relative wear of each cannot be accurately told, as the one helps the other so much and they vary according to local circumstances. On a strong consolidated road the greatest wear arises from the action of the horses' feet and the wheels of vehicles, and the smoother the road is the less the wear will be, as in a rough road, in addition to the downward pressure, there will be that pressure on every projecting stone which will tend to push it forward, and so cause a grinding movement between the stones. This pressure is greater in proportion as the diameter of the wheel is smaller, and is much more destructive than the vertical pressure. When the material is not thoroughly set this grinding movement is still more destructive and causes great wear and waste of material.

On weak or ill-drained roads great wear is caused by bending and cross breaking. When this takes place there is a yielding of the subsoil, as well as of the road coating; the road bulges and cracks under the weight of the load, the metalling is driven into the subsoil at the point of contact with the wheel, and that surrounding it rises above the level of the road; the surface water finds its way in through the cracks and weakens the road still more, and in frosty weather the frost gets in, and when the thaw comes the road is blown up in a great many places, and wet boggy places are formed which are very dangerous. Besides this the draught is very much increased on such a road, owing to the surface bulging before the wheels, and a horse is therefore, on a level road, continually pulling the load uphill. Along the sides of the ruts may be seen cracks, which lead directly to the subsoil.

The wear caused by the wheels of vehicles is influenced very much both by their diameter and width. It has been said by some that the resistance to traction on a road is in inverse proportion to the square root of the diameter of the

wheel. Others say it varies inversely as the diameter. From experiments made with Easton and Anderson's horse dynamometer at the Royal Agricultural Show, 1874, a slightly greater ratio than inversely as the diameter was given, and I am inclined to think that inversely as the diameter is the more correct view of the two. There can, however, be no possible doubt but that large wheels are much more favourable both to draught and wear of the road than small ones. The draught is always much less on a smooth, hard, unyielding road; a flexible yielding road, although it may be elastic, will not give back the force expended in the pressure of a wheel on it, and this force must naturally be more on a yielding than on a hard road.

Of the width of a wheel it may be said that, up to a certain limit, a broad wheel with the same load is less destructive to a road than a narrow one in about the following proportion—not, I believe, as is generally thought, in the direct ratio of its width. In practice, I think, a wheel two inches wide will be found to be nearly one and a half times as favourable to the road as a wheel one inch wide, a wheel three inches wide nearly twice as favourable, and a wheel four inches wide two to two and a half times as favourable. This will vary more or less under different circumstances, but will be found, I believe, to be about the correct proportions. My reasons for so thinking will be found in the theory explained in the next paragraph. Practically, no advantage is gained by having wheels more than four and a half inches wide. Sir J. MACADAM said that the maximum load which should be allowed on any vehicle should be nine hundredweight per inch of width of tire; TELFORD and Sir J. MACNEILL contended that five hundredweight was the greatest load that should be allowed, and I think their view to be the more correct one, as few roads, except in large towns, are strong

enough to bear such heavy loads as nine hundredweight per inch continually passing over them.

Broad wheels *loaded in the same proportion as narrow ones* are much more destructive than narrow ones. A road which will bear a considerable load on narrow tires will sometimes break down under the weight of a traction engine, although the pressure per inch of width of tire may be much less. I think the explanation of this may be found in the following theory :—If we take a wheel 1 inch wide and suppose that, at the point of contact with the road surface (which we will suppose for the sake of illustration consists of spheres 1 inch in diameter), it presses on a sphere and that sphere on four others, and so on in a pyramidal form, it will be found that the weight is distributed over a much larger area of the subsoil than the surface it comes in contact with. Now take a wheel 4 inches in width, and suppose it rests on four spheres placed in a row, each 1 inch in diameter, it will be evident that each sphere cannot rest on four independent spheres, and each pyramid will, therefore, be composed of parts of other pyramids, and intersect each other. With a 1-inch wheel the sphere would rest on four others immediately supporting it, and the four spheres in a row under the 4-inch wheel would rest on ten; at the same depth four separate 1-inch wheels would rest on sixteen spheres, as against the ten supporting the one 4-inch wheel, and the lower we go the greater becomes the proportion in favour of the 1-inch wheels. Therefore the greater the width of the wheel, loaded in the same proportion, the greater will be the pressure on the subsoil immediately under it, as the load is always borne by the subsoil and not by the road coating, which is merely a hard surface formed to protect the subsoil from the immediate effects of the traffic. Of course this will be greatly modified in practice, owing to the different sizes and shapes and the nature of the actual road coating.

It may, therefore, I think, be laid down that *broad wheels with the same load are much less destructive than narrow ones, but broad wheels loaded in the same proportion per inch of width as narrow ones are much more destructive.*

The best shape for a wheel is cylindrical; dished wheels should never be used, as, owing to their shape, their line of direction is not the same as the line of draught, consequently a lateral motion is caused which is a source of great injury to the surface of the road, especially in dry weather, and they also increase the draught. Wheels with tires the section of which is the segment of a circle are also to be condemned. In fact, all wheels which are not cylindrical have disadvantages for which they have no proportionate compensation.

The effect of springs is more noticeable with vehicles going at a high rate of speed than when at a walking pace—in fact, when walking, the draught is very little less than without springs: at higher rates of speed the draught is much less. This applies to a smooth hard road; on a soft yielding surface the good effect of springs is considerably lessened.

The weather has a considerable effect on the wear of roads, not so much directly as indirectly, by increasing the wear caused by the traffic. Excessive wet does much harm by softening the binding in the road coating, which destroys the solidity of it and causes great wear by the material rubbing together, and makes it less able to support the traffic. Frost after wet causes great injury. The water in the road, and sometimes in the material itself, when frozen, bursts the road coating, especially if the foundation is wet, and when a thaw comes the road becomes rotten, and much damage is sometimes caused by heavy traffic coming on a road at such a time. Rain after a thaw also causes great injury, and when alternations of frost and thaw occur the road is tried very much; indeed, a good road will sometimes

break up under such conditions. If the foundation is wet, and the frost reaches through to it, the road will be blown up from the bottom.

Excessive dry weather causes great wear, especially with a silicious road material, by the small stuff and mud being loosened, but this can always be counteracted by watering. Dry weather has less effect on limestone than on any other road material.

Trees and high hedges are also a great cause of wear by keeping the wind and sun away, the road remaining wet where otherwise it would be dry.

Wear is less, generally, in proportion as a road is smooth, strong, and well drained, and of a sufficient width to accommodate the traffic freely.

Many experiments have been made to measure the wear on roads, but this can mostly be only approximately done, unless the area and quantity of material periodically laid are known. Some say that the wear increases in direct proportion to the traffic, others that it increases in a greater ratio; but, from personal observation, I think that, on a road where the traffic is very heavy, the latter idea is frequently correct.

The amount of material expended annually in this country on main roads varies from about 40 cubic yards per mile, in remote country districts, to 1,000 and sometimes 1,500 cubic yards in the vicinity of large towns; but I think the general average would be from 70 to 80 cubic yards per mile. On district and parish roads it is frequently as low as 10 cubic yards per mile.

A great mistake is often made in country districts, where there is little traffic, in procuring a very hard stone from a distance, when a moderately hard one can be obtained in the immediate neighbourhood and at a very much less cost. The hardest stone is not always the best for a road; it is

only the best when the traffic is great. On a road where there is only light traffic a softer stone is much to be preferred, because the hard stones do not consolidate under the traffic, and the road is always rough and uneven. I have seen this in many cases, where, to make the matter worse, a quantity of road scrapings was put on in the spring to make the stones set. When the wet weather came, this was all squeezed out as mud, and had to be scraped off again, causing great inconvenience to the traffic and costing altogether about twice as much as the local stone would have done.

Where roads are repaired by thin coats without rolling, as all country roads must be, on account of the small quantity of stone used per mile, great care is necessary that none of the material is wasted. When the material is laid in the proper season, viz., in the late autumn or early winter, it soon consolidates under the traffic and forms a smooth surface. All the stone should be laid before Christmas, except a small quantity which should be kept for the necessary patching in the spring. The coat should never be more than one stone thick; if it is necessary to put a greater thickness one coat should be laid, and, when nearly consolidated, another should be laid on the top; by this means a much firmer and harder road is formed, and with less waste of material; but, when it can be avoided, a road should never be left to get so much out of shape as to require a greater thickness of metalling than one stone thick. Before coating a road is commenced in the autumn all the small hollows should be patched, which will prevent them wearing larger: then those portions of the road which require coating should be done. It is always best to lay the coatings in short pieces, as if a long length is laid the traffic goes to the side of the road to escape the stones, and frequently cuts it up very much, whereas when laid in short lengths

it is not worth while to go to the side to do so, as they are so soon passed over ; if a long length of road require coating it should be done in that way, and when the short coatings are worn in, which will not take long in the winter, intermediate coats may be laid. When the metalling is laid it should be constantly attended to, and raked so as to prevent the formation of ruts.

Generally speaking, there is no advantage in stocking a road when repaired in this way ; it may sometimes be necessary to do so slightly when the metalling is laid in a dry season, but this will always depend on circumstances.

Ruts are best repaired by filling in the wheel tracks first, and when the material is partly set, the centre rut should be attended to ; this is better than doing all three at once, or the centre and one side first, as in the former instance intermediate ruts are soon formed by the traffic avoiding the loose stones, and in the latter the traffic all goes to one side, whereas if the two outside ruts are filled in first, the traffic keeps to the usual line, on account of having the horse pad clear, and when it is time to repair this rut the traffic soon wears the single line of stone in.

If it should be necessary to lay a large coating on a street or road with heavy traffic, a binding material may be advantageously used, but, as a rule, a firmer road is formed without it.

It is essential that the superfluous mud be removed from a road. This may be done by sweeping or scraping where it is in the form of either mud or dust. When dust is regularly removed from a road it does not require nearly so much watering in dry weather as it otherwise would ; care must be taken, however, in a road composed of silicious materials that the road is not damaged by too much sweeping, as it will tend to disintegrate the surface, and a great deal of useful material is liable to be swept away. The best time

for sweeping is early in the morning before the dew has dried, and there is much less inconvenience to the traffic at that time.

Machines drawn by horses are sometimes used to sweep up mud or dust. The most common form is a circular revolving brush, mounted obliquely, which sweeps the mud or dust in a line on the one side, to be afterwards gathered up. Another machine often used is a scraping machine, constructed in an oblique manner also, and which acts in a similar fashion. This is very useful when the mud is partly dry.

The most useful machine that I have seen is WARREN'S. In this machine a series of brushes attached to an endless chain revolves as it is drawn along and sweeps the mud up an inclined plane into a mud-cart, to which it is attached. When this cart is full it can be removed and hauled away and an empty cart attached, so that the machine is kept constantly at work. Some surveyors object to this machine on the ground that it removes too much of the useful small material, about the size of small shot, from the road. It does do so to a certain extent, but this can be reduced to a minimum by adjusting the pressure of the brushes, which is easily done by simply turning a small wheel; but the amount of small stuff that this machine removes is so little more than the ordinary kinds do, that it is much more than compensated for by the great saving in time and labour, besides more effectually cleansing the road. The great advantage of this machine is that it removes the mud quickly and at once from the road, and does not interfere with the traffic while doing so.

These machines can only be advantageously used in or near towns, and where there is great traffic. In the country, hand scrapers and brooms are mostly used, but a small scraping machine which can be used by one man is of great

advantage. The best way to use it is from side to side, as this tends to preserve the cross-section of the road. A man can scrape a great deal more in a day with one of these machines than with a hand scraper, and do the work much better.

It is said by some to be very injurious to remove mud from a road when it is at all dry, but in most cases it is better for the road that it should be removed.

A road should never be watered unless it really needs it, as too much watering is very injurious and increases the wear from traffic.

To ensure the constant attention that a road always requires, it should be divided into lengths, each under the charge of a constant labourer. As much should be given to each man as will keep him constantly employed during the summer, and he will be able to do all the necessary work at other times with the assistance of casual labourers. The length of road apportioned to each man will, of course, vary very much according to circumstances. On main roads, from 1 to 2 miles, on a road with heavy traffic, to 6 and in some cases 8 or 9 miles on roads with light traffic. On parish roads these lengths may in some cases be longer. The constant labourer should be on his road at all times, wet or dry, and it is of great importance that he should be there during heavy rain and storms, so as to see that all drains and watercourses are clear, as great damage is frequently done to a road by their being choked, particularly in hilly districts, where a great amount of rubbish is usually brought down at the commencement of a storm. The constant labourer should have entire charge of his length, under the surveyor. He should not have his work set by the piece, as piecework is seldom so well done as daywork, and he should not be moved from his length to another without good cause, as nothing causes a man to lose interest in

his work so much as removing him when he has succeeded in getting his length into fair order. Some men can never be made good roadmen, while others acquire the necessary knowledge and skill very quickly, and will do more work and make the material go farther than others who have been at similar work for many years. It is generally much better to employ such men as these, even if paid a little more money, as it will be far more economical than employing the first man who applies for the work, as is very frequently done, because he will work for less money. This system of employing constant labourers has been in use on the South Wales county roads for the past 40 years, and has been found to work very effectually; it has also been adopted in several parts of England during the past few years.

I think it is a great mistake to let road repairs by contract—the work is never so efficiently done as it would be by daywork with men in charge of a skilled labourer, and when under the supervision of a surveyor. The only thing which can be advantageously let by contract is the supply of road materials, which may be supplied, ready broken, in heaps on the side of the road, or, better still, in stone depôts recessed in the hedge or bank. It is better to have the material in small heaps, at short intervals, so that it can be wheeled out with a wheelbarrow, rather than have large heaps at long intervals and have to cart it where it is wanted: the men can usually make the material go farther in repairing and patching if used out with wheelbarrows. It is best to have it supplied by the cubic yard rather than by the ton, and it should not be measured until broken and stacked. It should always be delivered by the end of the summer, as the road is less injured by the carting at that time, and the longer the stone is exposed to the action of the weather the better it is.

If the repairs should be let by contract, the term should

not be for less than three years, as if let for a shorter period than this, one man may keep the road in good repair for one year, and use a proper quantity of material and labour on it; the next year another man may get the contract, and do as little as he possibly can to it, just keeping it of good appearance until his contract expires, and then, as soon as wet weather comes, the road shows great signs of weakness, and requires a great deal of material and labour expended on it to bring it into good order again.

I have not gone into the cost of labour or material in anything referred to in this Paper, as they vary so much, even within a small radius, that such details would be of little practical value.

The length of road which a surveyor can well superintend must depend, to a great extent, on the nature of the roads and the situation of them. It will be found more economical in all ways to have districts of such a size that a sufficient sum may be paid to a surveyor as will enable the authority to obtain a competent man, and allow him to keep a horse. In this case, he could look after a much greater length of roads if he had two or three assistants, and a uniform system of maintenance over a large area is much to be preferred to small divisions.

Extraordinary traffic, as defined by the Highways and Locomotives (Amendment) Act, 1878, has caused a great deal of trouble and annoyance. It is frequently very difficult to tell what extraordinary traffic is, and when it commences. It is much to be wished that some clearer definition of what constitutes extraordinary traffic had been given in the Act, and that due notice of such traffic had been made compulsory, unless the traffic should be thrown on the road unexpectedly through an emergency. Such notice cannot be reasonably expected until extraordinary traffic is more clearly defined. Extraordinary traffic thrown suddenly on

a road, which is amply strong enough for the ordinary traffic of the district, will frequently destroy the surface of the road, often ploughing down into the subsoil and cutting the road completely to pieces. In many cases, if due notice had been given of the intended increase in the traffic, the road might have been strengthened so as to have borne it with little or no injury, and at a very much less cost than the after repairs, which were required to bring it into good order.

I think the abolition of turnpike trusts in England and North Wales was a great mistake, until some better method had been found to obtain funds for road maintenance. Then everyone who used the road had to pay for it, but now the burden falls almost altogether on one class, viz., the farmers, especially in agricultural districts. From inquiries which I have made in South Wales (where turnpikes still exist) at gates close to large towns, eleven-twelfths of the traffic which passes through them comes from the towns; and even at country gates, 6 or 8 miles from any town, three-fourths comes from the towns. It is manifestly unfair, then, that the county ratepayers should have to pay the whole amount for the maintenance of roads which are much more used by the townspeople than by themselves, and to this cause, I think, may be attributed the dissatisfaction which exists in the country as to the Highways and Locomotives (Amendment) Act, 1878. These remarks are intended to apply to main roads only, and not to district or parish roads.

The inferior state of a great part of the main roads may also, I believe, be traced to the same cause. The greater part of most Highway District Boards is generally composed of farmers, and they naturally try to reduce the expenditure on the roads to as little as possible, and in many cases have done so to too great an extent, and the roads have suffered

in consequence. The tendency is also to divide the present highway districts, which in many cases are already too small, and place each division in charge of a man who knows nothing whatever about road work, the salary offered being so small that no competent man would accept the appointment, a great many highway surveyors at present having had no previous training in road work whatever. I think this is a great argument in favour of the County Government of roads. The districts should be of a large size, and the surveyors should be appointed by the County Authority, and be required to devote the whole of their time to their duties. District Boards would be required to regulate the expenditure, and I think it advisable that all main roads should be either under separate management, as in South Wales, or be inspected by an officer appointed by the County Authority; or several Authorities might combine to pay an inspector, and he should deliver an annual report on the state of the roads, and superintend the preparation of the estimates.

Under the South Wales Turnpike Act the main roads of each county are governed by a County Roads Board, with, in some counties, District Roads Boards, as distinct from Highway District Boards, to regulate the expenditure. The surveyors have charge of the main roads only. The highway district surveyors are also appointed by the County Roads Boards, although not paid by them, and they have charge of the district and parish roads. Until recently, the main roads were annually inspected by a general superintendent of roads for South Wales, appointed and paid by the Local Government Board. This office has recently been abolished, as the loans advanced by Government to the respective County Roads Boards when the Act was passed have been repaid. In many of the English counties the main roads are inspected; but in many cases it is either by

magistrates, county surveyors—who are usually architects,—or police superintendents, &c. These may know very well when a road is in good or bad condition, but they cannot know, unless they have had special training, what is the most economical and best way of repairing a good road and maintaining its efficiency, or of repairing and making good a bad one.

A great deal has been said lately as to how funds should be obtained for the maintenance of roads if the present system of rating should be abolished. In my opinion the fairest way would be by the appropriation of the carriage-tax, and if that did not prove sufficient, by the reimposition of the horse-tax. All vehicles and horses, whatever they may be kept and used for, should be taxed. In the case of vehicles the tax should be adjusted on the basis of the tolls which were levied under the Turnpike Act, due regard being paid to the size and shape of the wheels. It may be said that in this case the townspeople would have to pay towards maintaining the country roads, whilst the country people would not pay anything towards the maintenance of the town roads and streets; but I think this objection may be met by providing that the tax should be divided proportionately and applied to both purposes, certain of the streets for this purpose being classified as main roads.

Since the preceding Paper was written, now nearly five years since, the Local Government Act, 1888, has been passed, and in Clause 20 it provides that all local taxation licenses, as specified in the first schedule to the Act, are to be paid into the Bank of England to an account called the Local Taxation Account, after which, when the respective amount collected in each county has been ascertained and certified by the Commissioners of Inland Revenue, it is to be paid, under the direction of the Local Government Board, out of the Local Taxation Account, to the County Council

of each county. This schedule, in addition to others, includes licenses for carriages, trade carts, locomotives, horses and mules and horse dealers; and in Section 121 a temporary provision is made by which, in addition to part of the probate duties, all duties on these licenses under any Act of the present Session are to be applied as a grant, to be distributed as follows:—"In
 "paying to every county, highway, and other local authority,
 "who have heretofore received out of moneys provided by
 "Parliament a contribution to the cost of roads, or to the
 "successors of such authority, sums calculated in like
 "manner and according to the like scale and regulations as
 "in the financial year ending on the thirty-first day of
 "March, one thousand eight hundred and eighty-eight."

If the wheel tax should pass this Session it seems probable this temporary provision may be made permanent; but, if so, the whole cost of the main roads would then be paid from this source, instead of only part, which the temporary provision provides for. It is much to be hoped that this tax will be passed during the present Session. A great outcry has been made against it, but it was only to be expected, as people who have previously benefited by the taxation of others do not care to have the burden thrown directly on their own shoulders. The usual argument against it is that the roads are for the indirect benefit of all. This is quite true; and, therefore, all the more reason why some more equitable mode of obtaining funds should be provided than at present exists, by which the whole cost of maintaining the county main roads is thrown chiefly on the agricultural classes. Very possibly, by the time this Paper is submitted to your notice, this matter will have been decided; but I believe that those who obtain a direct benefit from the use of the roads should pay directly towards the cost of their maintenance.

At present it is difficult to judge how the Act will work in relation to main roads. In South Wales all tolls will be abolished from the date it comes into operation, and funds for their maintenance will be obtained in a similar manner as in England and North Wales. The general opinion in South Wales is that under Section 11, Clause 2, the various urban authorities will take possession of the various lengths of road within their districts, thus leaving many short isolated lengths, which will be transferred by the County Councils to the various highway districts under Clause 4 of the same section. The proper maintenance of all these roads will be supervised by the road surveyors of the Councils of the different counties, and all payments to the bodies who have taken over these roads will be made on their certificates. It seems probable that the district roads there, which stand on a somewhat similar footing to the main roads in England, and receive a contribution from the common fund of the county, will all be declared main roads under the Act. No special provision has been made to meet this, as far as I can see, but it seems to be the evident intention of the Act.

In England a similar course seems likely to be taken as regards the absorption by urban authorities of main roads in their districts. The proper supervision of the main roads seems well provided for by the Act, as by Clause 5, Section 11, no County Council has power to make any payment to a District Council in respect of the maintenance, repair, or improvement of any road by an urban authority until the County Council is satisfied by the report of their surveyor or such other person as they may appoint for the purpose.

While the more efficient control and maintenance of the main roads appear to be well provided for, the importance of the proper maintenance of district and parish roads should not be lost sight of.

Mr. W. WEAVER (Fellow), in moving a vote of thanks to the author of the Paper, said that any criticisms he might offer on the Paper were based on a Metropolitan experience of the last 30 years in the parish of Kensington, and therefore his remarks would be of more value to gentlemen connected with the Metropolis than to those practising in the country districts to which the Paper specially referred.

He observed that, on the question of rolling, the author said:—"When a thin coat is rolled the roller generally "smashes a great deal of the stone, which would not be the "case if it were consolidated by the traffic"—and in the next paragraph it was stated:—"When rolling is resorted "to in repairing a road, it is sometimes necessary to stock " (presumably a local term for what Londoners call "lifting" or "scoring") "the surface of it. This should not be more "than half an inch deep, as deeper than that displaces the "old metalling and increases the cost." On these points he differed somewhat from the author. He thought that by "lifting" a road only half an inch in depth, it would be, in most cases, impossible to get a good, well-bound road made on the top of it, but he believed that a thin coating, spread on a thoroughly-loosened surface, would get better embedded and consolidated with the old material. When macadamised roads were lifted it was usually found that, if the material had been consolidated by traffic over it, and not by rolling, the edges and angles of the stones were rounded off; whereas if a road was lifted which had been consolidated by a steam roller it was found that the old stones came up with a sharp edge, which was much better for forming a new coat. He was of opinion that lifting should not only be done *sometimes*, but that (in the Metropolis at all events) it was imperative, in coating a macadamised road, to lift the old surface, or the new material would never consolidate with the old.



Again, the author had referred to the gauge of stone broken for macadamising purposes as " $2\frac{1}{4}$ or $2\frac{1}{2}$ inches." There was a great diversity of opinion as to the best gauge, but he found, in practice, that it was best to suit it to the nature of the traffic which the road had to sustain—for instance, if he were constructing a road to be used for light carriage traffic, he should put on light granite, but for a road to be used for heavy vans and omnibuses, he should adopt a larger broken granite. He used a gauge varying from $1\frac{1}{4}$ to 3 inches, to suit the nature of the traffic.

Further on, the author referred to the question of the pressure which a road had to bear under rollers and other sorts of traffic. It was a very interesting question upon which a diversity of opinion could be expressed, but he could not agree with the author, whose opinion, he might say, was opposed to that which Sir JOSEPH BAZALGETTE, the then President of the Institution of Civil Engineers, expressed in his evidence in the case of *Kensington v. The Gas Light and Coke Company*.

In the latter part of the Paper the author had referred to the changes made in road maintenance by the Local Government Act of last Session, but he apprehended that the present meeting was not the proper occasion on which to discuss that matter.

Metropolitan roads had of recent years undergone a very great change. Macadamised roads had been superseded to some extent by wood and asphalte, and, as the result of a large experience, he had come to the conclusion that in a district like Kensington it was better to supersede a macadamised road by one of 5-inch creosoted wood blocks, if the cost of maintenance of that macadamised road came to 1s. per square yard per annum. The creosote must be properly applied at 220 degrees Fah., and under a pressure of about 100 lbs. on the square inch. A section of Old

Brompton Road thus paved eight years ago, at the present time had not a semblance of wear on the surface, while plain wood in immediate proximity to it had been patched for the last two years.

Mr. G. J. BROWN (Fellow), in seconding the vote of thanks, said the question of road-making was a very important one. Many of the Members, like himself, had chiefly to do with country roads.

The gentleman who had preceded him had given his experience of London roads, where plenty of money was available; but in the cases many of them had to do with, what was the cost of a few yards of London road had of necessity to be spread over a mile or two in the country.

He noticed that the author rather deprecated the expense of going abroad to get harder material in some cases; but he thought that those in charge of country roads, as a rule, needed encouragement to get the best possible materials, unless, of course, at extraordinary prices. It was true economy to use the best material. Many local stones were so soon ground up on the roads that it was very important to get other stone, even from a distance and at considerable cost, so long as one insured a good road being made. The author had modestly described his Paper as one on "The Maintenance of Macadamised Roads," but he had gone further, and had given many hints on formation, and some useful information bearing on late legislation with regard to roads. He wished, however, that Mr. HEWITT had given a few statistics as to the cost of labour and materials in various parts of the country. If this additional information could be given by means of the "Professional Notes," or otherwise, it would be very useful.

Mr. J. BINFIELD BIRD (Fellow) said he had some

experience of road-making in various parts of England. He had lately made two roads, one 20 ft. wide and very undulating, some of the gradients being 1 in 30. He found, in practice, that in the case of springs cropping up, and nothing but clay, the best way was to face the clay first of all to form the road, and then, where it was wet, to put in agricultural drains regularly from end to end, with main drains to take the underneath soak, constructing the drains so as to cope with the wear and tear that country roads now had in the shape of traction engines. He also found, in draining the land in this way, that if he used 9 inches or a foot of hard core, and then 6 inches of gravel, it saved 3 inches over the whole surface, or an expense of something like 6s. a yard forward, as the gravel and hard core had to be brought from a distance of something like 8 miles.

He never omitted to put in the side channel drains, and catchpits, which he made very deep to intercept the water from the agricultural drains before mentioned, with a good iron grating, flush with the surface, with Swanage stone edge, so that nothing could break it, and it could be easily cleaned, and all the grit taken out after the first part of a storm. But his greatest difficulty was that some of the cuttings were 20 ft., and some of the banks 20 ft. The level of the banks had to be made up from very bad soil taken from the cuttings, so that, when it rained, the land ran forward; these cuttings costing 10 to 1 more in proportion than the whole road. To fill the gorges, gorse faggots were cut and broom, all mixed, forming a surface which, as yet, had not slipped. That road cost 40s. a yard forward.

Another road of 40 ft. width, where the subsoil was nice hard sand, and gravel was close at hand, was made and kerbed and channelled for 15s. a yard forward, although twice the width of the other road. He had to make a road

on a building estate in Sheffield where immense boulders of rock rendered it impossible to do anything except to blow the rocks to pieces and to break them up, forming the surface with larger stones, some going through $1\frac{1}{2}$ -inch, and some, $2\frac{1}{2}$ -inch rings.

Then, in another case at Hull, roads 40 ft. wide, with 10 ft. paths, kerbed and channelled, and with good surface drains, were made for something like 60s. a yard forward.

At Chingford very large sums had been laid out in road-making lately; gravel was delivered at the station at 4s. a yard, and burnt ballast cost from 2s. 6d. to 3s. 6d. a yard, to put on the roads. The subsoil was bad and soft, and difficult to drain, and the principle was adopted of putting agricultural drains at the bottom, with, say, 2 inches or 3 inches of hard core. A road across Epping Forest, where gravel and bushes could be obtained from the forest, cost something like 21s. a yard forward, and as the gravel was bad, this road had cost a considerable amount for repairs. It was impossible to give the exact cost of roads, as, the circumstances varying, all depended on the facility in obtaining gravel and other materials. One could only deal with each case by itself.

Major-General C. E. LUARD, R.E. (Associate), said he was sorry that Mr. HEWITT had not given details of cost. Undoubtedly the cost of maintenance of roads varied much in various localities, but some information on the subject would have been welcome.

He found no reference in Mr. HEWITT's Paper to a very valuable work on the subject of the maintenance of roads in South Wales, written some years ago by Mr. CODRINGTON, which gave a very exhaustive description of all the roads in the district of which he had the management. The district with which the Paper specially dealt had the advantage of

being in the neighbourhood of the Clee Hill stone, and surveyors in that part of the country were in the habit of making use of this stone, not for the entire metalling of bye-roads, but only for those portions (the ruts) which were subject to the greatest amount of traffic—one of the most able surveyors in that district, a Mr. WRIGHT, being of opinion that this plan invariably resulted in very great economy in maintenance. The remainder of the metal was what was generally called corn-stone in that country.

Roads could not be kept in good order without good labourers, but in many parts of the country the road labourers were very inferior, and required a good deal of training by a man accustomed to road management, and a really capable surveyor could undoubtedly do a great deal of good in his particular district.

A small point, but, it seemed to him, a not unimportant one, was the scraping up of loose stones at the side of the road at the time of the year, the summer, when they were most troublesome. These loose stones spoiled a road, and were dangerous to traffic, but if the labourers collected them and put them at the side of the road till the right time of year they could then be used for repairs.

The subject of gradients had also been mentioned, and where 1 in 30 or 1 in 50 could be obtained, it was an excellent thing; but he—not in England, certainly, but in Zululand—had once had to deal with gradients of 1 in $4\frac{1}{2}$, up which there was the greatest difficulty in getting a load even with two spans of oxen (numbering 36) harnessed to each waggon.

The subject of brushwood was not unimportant. Every road labourer had a knife in his pocket, and could always cut brushwood, and when he found a weak wet spot in the road, if, instead of putting in pipes, he would make a fascine of those rods tied together, open the road and put

them in, and make good the road again, it would get rid of the water and save a great deal of expense.

Perhaps the most important thing to do in connection with the new County Council would be the enlargement of the areas of responsibility, so that a county authority would get a more complete management of the roads in the whole district than hitherto.

A case of considerable hardship had come under his notice lately. In a parish in the highway district of Malling, in Kent, there happened to be a very good quarry of rag-stone—so good that several districts outside the district of Malling had entered into contracts for this stone, and enormous quantities had been exported for some time by traction engines and draw-trucks to districts entirely outside that highway board. The result was that not only had the roads within half a mile to a mile of that quarry been entirely ruined, but the reputation of the surveyor was, unfortunately, almost ruined too. Now, if the highway districts were consolidated under one county authority, as was the case in South Wales, and, in a great measure, he believed, also in Herefordshire, undoubtedly the cost of the roads would be distributed in a fairer way.

Mr. W. WOODWARD (Professional Associate) said, although there might be a difficulty in carrying out the idea in London, it seemed to him that if, instead of applying a steam roller directly to the road when the foundation was laid or even when the road was completed, carts with wheels 6 in. wide were to go backwards, forwards, and diagonally over it, the stones would be pushed into their place rather than crushed by the vertical pressure of the roller. But what might be easily done in the country could not be adopted without great difficulty in London, everyone being so anxious to get the traffic on the road directly it was

formed; but to his mind it would be a great saving, for the foundations would be consolidated, and would not sink as they sometimes do.

This desire to put traffic on the road almost before it was set had an important bearing on the life and maintenance of roads. There ought to be some little time for the road to consolidate, and if the public would put up with a little inconvenience, the surveyor would get a great deal more credit than he now did for properly-formed roads.

He might conclude by referring to a few statistics from a Paper on the formation of roads in London, read about two years ago before the Institution of Civil Engineers, which, although not dealing with exactly the same branch of the subject as the Paper now before the Meeting, seemed to him not without interest when dealing with roads.

These statistics showed the nature of the formation of the principal London roads, viz., macadam, 573 miles; granite, 280 miles; wood, 53 miles; asphalte, $13\frac{1}{2}$ miles; and flints or gravel, $798\frac{1}{2}$ miles. The existing area of wood pavement was 980,533 square yards, and its estimated cost £600,000. As to the cost of repairs, he found that in Westminster the annual cost of macadam, repairs alone, was in Parliament Street, 2s. 10d. per yard super, in Whitehall 2s. $10\frac{1}{2}$ d., and in Victoria Street 2s.

Mr. R. F. GRANTHAM (Associate) desired to add a word to Major-General LUARD's observations on gradients. He observed that Mr. HEWITT had laid down that "no road should ever be made with a gradient steeper than 1 in 30." He believed that was TELFORD's rule; but Mr. HEWITT appeared, inadvertently, of course, to have left out the saving clause in TELFORD's rule, which was, "*as far as possible*," which made a great difference. There were many parts of the country where it would be impossible to obtain a gradient

of 1 in 30—hilly countries where one had to be satisfied with 1 in 13, and good roads could be made with that inclination. He remembered making a road where the natural slope of the land was 1 in 7 or 8. The best that could be done with it was to make it 1 in 11, and that only by 20 ft. of cutting at the top of the hill. If Mr. HEWITT's rule of 1 in 30 had been worked to, there would have been more than 120 ft. of cutting at the top of the hill, and the estimates would have been very much exceeded. He should have asked Mr. HEWITT, if he had been present, whether, when he spoke of the greater part of the traffic— $\frac{11}{12}$ and $\frac{3}{4}$ of it coming out of the towns—it was not somewhat lighter traffic than usually went over the roads. He would have thought the traffic carried on by farmers would have been much heavier than that from the towns, even though that was numerically greater in proportion.

Mr. H. S. FENNING (Fellow) said that the writer of the Paper had not alluded to a point of some importance in connection with some of the country roads, namely, the lowering of the road-sides from time to time (in narrow roads especially), where from constant scraping they had become raised, thus preventing the water flowing off into the ditches. He had seen this done with great benefit, and thought the point worthy of the notice of the road surveyor. It afforded useful labour for the men in winter, and where the neighbouring farmers were willing to remove and utilise the material dug out, it would also be a benefit to agricultural land.

With reference to roads formed of flint, a surveyor in his neighbourhood had improved several soft bad roads by adding small quantities of granite. Just a sprinkling of granite gets keyed into the flint roads, forming a durable surface. As to iron slag he had found it very good for

bottoming roads, but not for putting on the surface, as much of it was very porous and crumbled to pieces under the wheel. There was, also, the disadvantage that, after a few showers, a slag-covered road smelt most disagreeably. In spite of this drawback a great deal of slag was used on the roads in some districts, involving, he believed, much waste of public money, as one-third of granite would go further than two-thirds of slag.

MR. S. W. WILLIAMS (Fellow) said his experience had been chiefly in making roads in some of the wildest parts of Wales, which, being paid for out of public funds belonging to the freeholders, had to be made in the most economical way possible. He found the best width 20 feet, and that it was advisable to disturb the ancient turf as little as possible. Where cuttings and embankments were necessary, and the ground was very wet under the embankments, it was a very good plan to lay in gorse. Longitudinal pipe drains should be used, unless the subsoil were shale or gravel, but wherever it was clay, draining was of great advantage. He found, as a rule—almost without exception—that the best foundation was broken shale or gravel, and not hard boulders; because given a thin coating of metal on hard boulders, the metalling worked down, and the boulders—to make use of a common expression in the neighbourhood—“grinned up” in a very short time. From 9 to 10 inches of shale was generally used, and upon that from 4 to 5 inches of broken metal was laid at the time, 12 feet wide, and it gradually worked out to 13 or 14 feet. He found it a great advantage to lay sods on each side of the road to keep the material together, for the traffic over it drove much of the gravel away. For culverts he had generally used, of late years, the ordinary 9 inch and 12 inch glazed pipes. Ordinary flag-stones made a very satisfactory form of culvert.

In making that kind of road the cost varied, but it averaged from £350 to £500 a mile.

Some roads at present being made in Shropshire would cost about £400 a mile. He thought that under the present system the turnpike roads in South Wales would compare favourably with those in any part of England or North Wales, and were most economically managed, and if under the County government system they did away with the management of roads as existing in South Wales it would be a matter of regret. An inspector of roads should be a man who thoroughly understands the management and details of road work; and it would be far better if the counties were grouped, as was done in South Wales—five or six counties together—with a Government inspector, a man well paid to look after the surveyor, and a thoroughly good surveyor to supervise the men.

THE PRESIDENT, in closing the discussion, said he was sure that Members who had heard or would read the Paper would share with him a feeling of gratitude to Mr. HEWITT for introducing the subject. He regarded the old Roman roads, parallel to which he often travelled, as a great evidence of the civilisation which the Romans conferred on the Britons and their successors.

They were somewhat roughly made, but went in as direct a line as possible from one station or encampment to another, differing in that respect from the roads or tracks which Mr. DRUMMOND describes in Central Africa, where, when the fallen tree had caused a divergence, the same divergence was maintained for generations after the obstruction had disappeared.

He hoped the Paper would be a prelude to many other practical Papers on cognate subjects in which the general body of surveyors throughout the country were interested.

Mr. W. HEWITT, in a written reply to some of the criticisms on his Paper, after expressing his thanks for the kind reception it had met with at the hands of the Meeting, observes:—In reference to Mr. WEAVER's remarks as to depth to which the road surface should be stocked or scored preparatory to rolling, that if it were thoroughly done, and the whole surface loosened, $\frac{1}{2}$ an inch would be sufficient for metal broken to an ordinary gauge, such as $2\frac{1}{4}$ or $2\frac{1}{2}$ inches; but if large-sized metal were used, it might be advantageous to pick the surface a little deeper, the only purpose in loosening the surface being to form a matrix for the reception of the new stone. When there was so much stone in the road as to require only a thin coat, it would then, no doubt, be found advantageous to lift the road to such a depth as would enable the metalling in it to be formed more into shape before receiving the new stone. Lifting, as described by MACADAM, consists of removing the whole of the road coating, when there was a great quantity of material in it, and it had got badly out of shape, separating the material, carefully selecting it, breaking down the large stones to a proper gauge, and re-forming the road with these materials; and when lifting a road was spoken of in the country, such was the meaning usually attached to it, merely loosening the surface being indifferently spoken of as scoring, picking, or stocking. He quite agreed that when a thick coat of material was consolidated by traffic, much of it had the edges and angles rounded before it set. This he had already stated; but if a coat one stone thick were laid at the proper season, namely, late autumn or early winter, it would quickly consolidate, and with little or no rounding from the traffic. It would also form a stronger road than if rolled.

With reference to the gauge to which stone should be broken, he thought he had made it quite clear that, while advocating a gauge of $2\frac{1}{4}$ or $2\frac{1}{2}$ inches for general purposes,

for light traffic and patching it should be broken to a smaller, and when rolled to a larger, gauge. The nature of the stone and purpose for which it was to be used must always regulate the gauge.

There was doubtless a great diversity of opinion as to the pressure a road has to bear under rollers, &c. He had not had the pleasure of acquainting himself with Sir JOSEPH BAZALGETTE's opinion, but his own idea was supported by Mr. CODRINGTON in his work on the Maintenance of Macadamised Roads. Of course the theory in practice would be considerably modified, owing to the nature and shape of the material in the road coating and the nature of the subsoil, and from these causes the pressure would not be equally distributed over the whole of the pyramid, but would be found to be greater immediately under the wheel. If a road which has broken down under excessive traffic be cut carefully through the principal lines of fracture, which will agree with the principal lines of pressure, matters would be found to correspond very nearly with what he had previously indicated, and an irregular pyramid would be formed, the apex being the point of contact with the wheel, the form of the pyramid varying according to the diameter of the wheel. The larger the latter the more oval the pyramid would be. It would be found to be full of fissures, and one or two principal lines of fracture would be found to be almost vertical. Mr. CODRINGTON gave the angle of the outer lines of fracture as varying from 35° to 55° , an average of 45° .

He was sorry if Mr. BROWN had misunderstood his remarks as to the use of a harder material. What he wished to show was that local material, such as limestone, is often neglected when it is quite strong and hard enough, and much better adapted for the light traffic of the district than a harder material. On some of the best roads with

light traffic with which he was acquainted mountain limestone was exclusively used, and if a harder material were employed it would not consolidate, and great part of it would have to be removed every spring. He would be the last to advocate the use of unsuitable and worthless local stone, and only wished to point out that the opposite extreme is sometimes resorted to.

Another speaker (Major-Gen. LUARD) seemed to think one district was specially dealt with in his Paper. Such was not his (Mr. HEWITT's) intention, and he believed the principles he had indicated were generally applicable to all parts of the country, but if any district was more in his mind than another it was South Wales, as the greater part of his experience had been gained on the Glamorganshire county roads.

The removal of loose stones was a matter he inadvertently omitted. They should be all removed by the end of March; the fewer there were to remove the better for the road, and if the metal be laid at a proper season they will be reduced to a minimum.

Several Members had advocated the use of fascines for cross drains or drains of any description. He believed rough stone of any kind to be much preferable; if used for foundations, wherever the district is more thoroughly drained, the road will sooner or later go to pieces.

With reference to Mr. GRANTHAM's remarks on gradients, he did not wish it to be understood that he laid it down as a hard-and-fast rule that 1 in 30 was the steepest that should ever be employed. The physical formation of the country and the cost of the road must always have a great influence on this question, but he could not agree with him that there was any economy in constructing a road, especially where there was much traffic, with such a gradient as 1 in 11. The first cost might be less, but the after expense of maintenance would be much greater than with an easier gradient, and the

road would never be likely to have a good surface. If it had been possible it would have been much better to have carried the road round the hill, as it would be very difficult for heavy traffic to get easily up or down it.

The great part of the traffic he spoke of as running from the towns was not lighter than that carried by the farmers: in many cases it was much heavier in the districts in which he caused inquiries to be made. Much of it was from iron, copper, and other works, collieries, &c., and such works or corresponding ones had to be taken into account in all parts, unless the district be exclusively agricultural. It should also be borne in mind that carriers, whose traffic is very heavy, at present contributed little or nothing towards the cost of the roads.

Another speaker (Mr. FENNING) had alluded to the lowering of the sides of country roads, where from constant scraping they had become so raised as to prevent the water flowing off into the ditches. Under a proper system of maintenance such scrapings should not be allowed to accumulate, but should be removed as speedily as possible. On the South Wales county roads, a clause is embodied in the contracts for the supply of road material by which the contractors are obliged to remove the road scrapings within twenty-four hours' notice from the constant labourer to do so; failing to remove it, the surveyor has power to employ other labour to perform the work and charge the cost to the contractor. This system had been found to work very well, as farmers who wished to use the road scrapings knew they must remove them quickly or the contractor would do so.

With reference to roads formed of two materials used together, it was his experience that, although sometimes forming a good surface when the road was newly coated, from the unequal hardness of the different materials the road eventually became very rough.

A wish having been expressed for statistics, he was now preparing some in reference to cost of maintenance, to be given in the "Professional Notes," and must express his thanks for the great assistance rendered him in this matter, as to particulars of cost of present maintenance of the Glamorganshire county roads, by Mr. F. HAMILTON PHILLIPS, head surveyor to the Glamorganshire County Roads Board.

The vote of thanks was put and carried unanimously.

The Meeting then adjourned.

THE PROSPECTS OF AN AGRICULTURAL REVIVAL.

BY A. D. WELLS (ASSOCIATE).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION, Monday, December 10th, 1888.*

MR. ELIAS PITTS SQUAREY (PRESIDENT) IN THE CHAIR.

THE last time I had the honour of addressing you my argument was intended to prove the impossibility of farming ordinary land to profit, with wheat £1 per quarter below the average price of 56s., unless there was a corresponding reduction in outgoings, or the substitution of some other rotation of crops for the time-honoured four-course system. On that occasion you were good enough to listen with great patience to a long list of figures, and, although one gentleman who led the discussion which followed handled some of my details rather roughly, the line of argument remained unaffected, and my conclusions defied serious criticism. This evening I have a series of opinions rather than facts to place before you, and I ask your kind indulgence while I attempt the pleasant task of leading you to think the present time is not so black as it is painted, and that there are good reasons for believing that the patch of blue is even now to be seen in the horizon which presages sunshine after rain, fair weather after foul, and better times in store. It has very often been said, "Do not prophesy unless you know," and the would-be prophet is often met with the truism "Nothing happens but the unexpected," but who expected the present

state of affairs 12 or 14 years ago, and who would listen then to the prophet of evil? Sir ARTHUR SULLIVAN, lecturing the other day on music at the Society of Arts Rooms, expressed a hope that the present system of musical education would not only make some good musicians, but that many more would become good listeners. I hardly expect that in such an assemblage of essentially practical men the mere good listener will be considered entirely satisfactory, and I confess I think there are generally more than enough listeners and critics, and a scarceness of men of action, originality, and fertility of resource. With most men there is a strong inclination to sit still with folded hands and resign themselves and their charge to fate. Allow me then, without further preface, to call your attention to my first point.

There is a sign of agricultural revival in the fact that farms let more readily now than they did a year or two ago. This is proved by the returns collected and published by *Bell's Weekly Messenger*; but I do not doubt that many (perhaps every) gentleman present, has had evidence of the fact that there are now more applications from would-be tenants, less land perforce in the hands of the landlord, and little, if any, fairly good land entirely untenanted. Why land lets more readily I intend to consider later. Farm lands sell more freely now than they did. I am not trying to prove that the price per acre has recovered the immense drop since the times of high prices, but I think there are more purchasers. Money is again offered on loan to farmers. It has been said by some that country bankers have been the ruin of farmers, by giving them almost unlimited credit, thus engendering extravagant management of farm and home, besides enabling men without much capital to be candidates for farms to let, and to bid higher rents than men who had sufficient capital of their own, and then (unkindest cut of all) shutting down suddenly on the unfortunate borrower and recalling the loans

already made. This was the action, for the most part, of the Joint-Stock Country Branch Banks, who then steadily refused to lend farmers money. Now those with money to lend are ready to listen to the cases of reasonable borrowers.

To pass on rapidly to reasons why these things are so, and what are the chances that these favourable symptoms will be maintained, and probably increased. Why does land let more readily? First, because farmers think the lowest prices for corn have been reached. There is good reason for believing that neither the United States nor Russia nor India can grow and sell to the shippers at lower rates.

The total importation of wheat and wheat flour (after allowing for the re-exports) for the year 1887, was 73,075,239 cwt.; within the last nine years the highest importation was only about 80,000,000 cwt. This was contributed by our three largest senders, viz., the United States, Russia, and India, in the following quantities:—

	1879. Million Cwt.	1880. Million Cwt.	1881. Million Cwt.	1882. Million Cwt.	1883. Million Cwt.	1884. Million Cwt.	1885. Million Cwt.	1886. Million Cwt.	1887. Million Cwt.
States . .	44	44	45	44	40	34	38	37	48
Russia . .	8	3	4	9	13	5	12	3	5
India . .	1	3	7	8	11	8	12	11	8
Totals for } the three }	53	50	56	61	64	47	62	51	61

These figures represent million cwt. of wheat, wheat meal, and flour. And here is a remarkable fact connected with these importations,—the population of the United Kingdom has increased 10 per cent. within the last nine years; has the volume of imported corn increased in a like proportion? Certainly not. Nor has it increased, looking at the *total* imports of wheat, wheat meal, and flour from all sources: we have for the corresponding years:—

	1879. Million Cwt.	1880. Million Cwt.	1881. Million Cwt.	1882. Million Cwt.	1883. Million Cwt.	1884. Million Cwt.	1885. Million Cwt.	1886. Million Cwt.	1887. Million Cwt.
Totals . .	73	68	71	80	84	66	81	65	78

Basing a calculation on the fact that each person consumes the equivalent of six bushels of wheat per annum, *the total consumed should rise in the proportion of 33 to 37=10 per cent. increase of population would be from 33,000,000 to 37,000,000;* but the importation of bread stuffs has not increased.

Now, from these facts I gather that foreign and colonial competition is not likely to be more severe in the future than it has been in the past nine years. If the prices obtained had been sufficiently remunerative to foreign growers, most assuredly more corn would have been grown and sent here; the fact that there is no substantial increase in the quantity imported is the clearest proof—the most weighty evidence—that other field-crops, other industries, and commercial openings pay foreign and colonial farmers equally well. It may be argued, and probably will be argued, that India will increase her area of wheat lands, or by an improved system reap more abundant harvests in the future. I do not think it, unless greater facilities are given them, or unless a higher price is obtained in the future than in the past.

The Indian cultivator must receive more than he has yet received. This view is supported by competent authorities, who declare that the Indian ryot receives as much money value now as he obtained in 1872: he gets as many rupees for his wheat, and the rupees are worth as much to him as ever they were. The quantity of wheat exported from India has not been heavier the last five years, notwithstanding greatly-increased facilities for internal transport, the low freights of the immediately-preceding years, and the opening of the Suez Canal in 1869. That wheat will continue to be grown in India in rather larger quantities is almost certain, even at present prices, but no doubt a great stimulus would be given to its cultivation if higher prices prevailed.

The effect Indian wheat (even in its moderate supply) has had on European prices is very marked; wheat from

that quarter of the globe came on the top, as it were, of other supplies, but it is sufficient proof that the Indian farmer does not like the present price of wheat that he does not grow a larger quantity to export. Then with India, as with our other large competitors, the question of increase of its own population is very pressing, and must in the future materially affect the wheat available for exportation. British rule in India is so beneficent that the population increases at an enormous rate. Formerly tribal feuds and internecine war, infanticide, uncontrolled disease, superstitious reverence for deadly reptiles, and periodical famine and famine-fever kept the population of India almost stagnant. Now these obstacles are removed or mitigated; the "teeming millions" pile up millions more. It may not be generally known that the population of India to the square mile is now nearly five times as great as that of Russia, and in the N.W. province the population is twice as dense as Germany's, three times that of France, four times that of Scotland, five times that of Spain, and twelve times that of Russia. Certainly all the possible wheat-growing land in India has not yet been brought into cultivation, but the limit is within measurable distance.

Russia was till quite lately the principal competitor with the wheat-growing British farmer. Now she seems to struggle hard with India to retain the second place. Undoubtedly the black soil, so suitable for wheat production in Southern Russia, is now, as it was in the days of the early Roman Empire, most productive, and naturally well suited to the growth of wheat; and, again, the sparse population of Russia (only about 80,000,000) should leave a large surplus for exportation, but the total produce is estimated at less than 1 qr. of wheat per head of the population. Russia has an abundance of fertile land, but her farmers are oppressed by Imperial taxation: the

usurer has very generally full possession of the crop before it is harvested, and facilities for storage, for conveyance to the port, and shipment, do not, as a rule, exist. Perhaps we have no more striking contrast of helplessness and self-help than Russian and American agriculture. One specimen of Russian farming I remember seeing at the Paris Exhibition—a Russian land-cultivating tool, of much the same size and style as one of our ordinary steam cultivators, in charge of a one-eyed Russian soldier, who explained to me that this gigantic cultivator was to be drawn by a team of about 20 oxen; but I doubt if this large idea ever had the opportunity of displaying its power—certainly few Russian farmers could find enough draft cattle to draw such a mammoth machine. Russian wheat is credited with being a great favourite with millers; it is said to possess what is technically termed “strength,” but I do not think Russia will become a more formidable competitor with home farmers until the lands naturally so favourable for the production of wheat are in the hands of a different class of cultivators, until the cultivators are free from the usurers, and until the Government, if not new, is renewed.

The last competitor with whom I have to reckon is the United States, and then I intend to proceed to the consideration of the “prospect of an agricultural revival,” from the English farmer’s point of view.

From the report (1887) of the “American Commissioner of Agriculture” I find that the United States exports more than half the wheat sent to this country—to be strictly accurate, $51\frac{1}{6}$ of the whole. There is, of course, a large and perhaps increasing quantity sent us from British North America, that is, Canada, but I do not propose to consider this. The total amount of wheat exported from the States is divided into two parts in the official returns,—that started from the Atlantic ports and that despatched from the Pacific

ports; the former is about three-quarters and the latter one-quarter of the whole. The principal change or displacement of this proportion likely to affect British agriculture is the completion and opening of the Panama Canal. That this gigantic undertaking will be completed is certain if sufficient money is forthcoming, and M. DE LESSEPS seems to know the weak points of human nature, although he is possessed of immense strength of mind and will himself, for by introducing a gambling element he has been able to raise very large sums for the carrying on of his work, when the sober prosaic investor was not to be tempted. If the Panama Canal is opened for wheat-carrying vessels the cost of freightage from the Pacific ports will be lowered, and the market value correspondingly affected. The low price at which American farmers can grow wheat and send it here is, of course, only because it has paid best to utilise the fertility of the virgin soil, and plant and replant wheat year after year on the same ground, without following any rotation, the only expenses of the entire crop being the rent or mortgage on the freehold, the seed, the roughest cultivation, the harvesting and threshing (often performed under one operation), and the elevator expenses.

It has been estimated that, proceeding on these lines, wheat could be produced at the very low price of 11s. 2d. per quarter, but, like many estimates, this does not leave sufficient margin for sundry expenses, and the fact remains that India *cannot* produce wheat under 23s. per quarter, and the United States, with all her virgin fertility, *does* not. I need not remind you that this stored-up fertility of the soil does not last for many years. Some soils are exhausted (that is, will not return the seed and leave enough to cover the small outlay considered necessary) after five successive crops of wheat: other soils last unexhausted for ten successive crops, but it is, first and last, a principle of exhaustion; for

even straw is burned to get it out of the way, and stables for the draft animals are removed to a fresh site when the pile of refuse, which we call manure, becomes inconvenient and dangerous to health. Of course, when the prairie humus has been converted into all the wheat it can be converted into, the farmer leaves his farm a desolate wilderness and breaks up fresh soil, to be in its turn abandoned. This low-priced, because low-cost, production of wheat becomes impossible immediately the farmer has to resort to any system of rotation of crops, or attempts to fertilise by artificial means those soils which contain no longer a store of wheat-growing constituents.

The question then resolves itself, so far as regards the competition of the United States with British agriculture, into this: how much more prairie land remains untouched, ready to be broken up, and how many years will this reckless system of wheat production last and pay the grower? This could only be answered by referring to estimated extent, and I must content myself with leaving this problematical.

But the other point closely connected with the question is *the increase of population* in the United States. This can be ascertained with accuracy for the past, and a reliable estimate may be made of the future. I do not say that some unforeseen element may not alter the course of events and retard the natural increase of population, or that the counter-attractions other countries offer may not divert the stream of emigration; but, on the other hand, there is an equal probability of some unforeseen circumstance even augmenting the present enormous increase of mouths daily requiring to be fed. There is now in the United States a population of about 60,000,000 persons, and it is reckoned that the population actually doubles itself in 25 years, so that in 1913 there will be a population of 120,000,000, and in 1938, only 50 years hence, 240,000,000.

If the inhabitants of the States require as much bread as our English people, 5 bushels per head per annum (and the amount exported now is only 40,000,000 cwt., about enough for 18,000,000 persons), it is obvious that the States in 7 years will require all she now exports, 9,000,000 qrs., to feed her own population ; and if once the consumption overtakes the supply, and there are more hungry mouths than bread to fill them, prices must advance. Imagine the effect on the market even 14 years hence. Undoubtedly larger tracts of land would be made to yield up their natural fertility, but when this is gone, and fallow green crops, farmyard and artificial manures are pressed into the service, prices must be advanced by shillings, if not by £1 a quarter.

I have now gone through the three principal *wheat*-producing competitors the British farmer has to reckon with. But the same remark, the same calculation, applies to meat production. Where are the enormous quantities of frozen meat promised us from the Antipodes, and where are the fat American cattle which were to be sent here alive ? Where are even the pigs and American bacon which threatened 40 years ago to swamp our pig markets and make bacon-curing in England an extinguished industry ? The frozen-meat trade has shrunk to small dimensions, the low price last year of English mutton was a crushing blow to importers of Australian mutton, and 9*d.* per lb. for frozen lamb (the price I was asked to pay in Leadenhall Market last August) came to me as an inspiration. I know from experience that frozen meat is generally very fairly good when well cooked ; there is nothing objectionable in taste or appearance when brought to the final test, but no one can say it is equal to the best English-fed fresh-dressed meat. The rich and well-to-do classes will not purchase it unless they are penurious ; and my experience is that no class is so particular, fastidious, and

critical about the exact flavour of the plain food they are accustomed to consume as the working class. My own farm labourers, who eat regularly cold bacon with their principal meals, can rarely be induced to purchase American bacon, and domestic servants in the family feel a sense of injury if asked to eat anything a little differing in flavour from the best English. I confess I cannot but regard this preference for British (not to say abhorrence of foreign) meat with satisfaction, and if the middle classes, who now are the chief purchasers of foreign meat, followed on the same lines, and determined to purchase nothing, either food or clothing, but of English, or rather British-production, it would certainly be much better for the British farmer. The frozen-meat trade may be in its infancy, or it may always remain a dwarf; at present the consumption of imported meat per head of the population is about 28 lbs. per annum, and frozen meat consumed, or destroyed as unfit for food, is less than 2 lbs. of this 28 lbs. I know we have besides North America such places as La Plata and even the Falkland Islands, in South America, to think of; but I cannot imagine that mutton with much fat can be produced on natural grass except at certain times of the year on the best pastures, and if food for fattening sheep has to be cultivated and grown artificially, I do not see how turnips, &c., can be grown and fed to sheep cheaper abroad than at home.

With regard to cattle-rearing, the fortunes made a few years back by cattle-ranching are no longer to be made. The cattle companies, launched with English money, have in many cases wound up their affairs. Texan cattle, which were to be replaced by shorthorns, or graded shorthorns, got a living through the winter, and had sufficient instinct to sniff the coming storm long before it was upon them, and sheltered themselves under, perhaps, a friendly rock or group of trees: the poor improved breed of cattle die in a

hard winter, and their calves are often decimated even if the older animals survive. No doubt imported frozen beef has a better chance than frozen mutton: it is less delicate in flavour, more condiments are eaten with beef, and it is natural that many persons should prefer the sirloin of frozen beef to the fore-quarter joints of English beef, particularly when the choice lies between best foreign, and bull or cow beef English-fed. If there is one domestic animal which increases more rapidly than another it is the pig. Pigs are generally healthy when running loose, and there is plenty of elbow-room for pigs on American farms: then maize can be grown so cheaply in certain districts that it would appear to us English farmers that pig-rearing and pork-packing must pay our foreign competitors well, but it cannot pay well, for there is no increase. Whether the Yankee loses his profit by endeavouring to produce lean pork I do not know, but if report says truly, lean pork-feeding is carried to such perfection in America, and farmers have such difficulty in keeping their lean pigs in the sty, that they are obliged to tie knots in their tails to keep them from creeping through the pales. One source of American food supply for pigs is unknown in this country. At certain seasons of the year wood-pigeons build their nests and rear their young in vast quantities in the enormous woods which abound in certain districts. A high wind springing up, the young pigeons are shaken from their nests, and are devoured on the ground by fatting pigs, turned into the woods for this purpose. The hogs are said to gain flesh rapidly, and the meat to be of a delicious flavour. As a well-bred pig will put on 1 lb. of flesh for every 7 lbs. of corn consumed, I am at a loss to imagine why the importation does not increase: the fact remains, threatened lives live long, and British farmers are still able to rear and fatten pigs to a profit.

I have now touched on the improbability of the strain put on British agriculturists by foreign and colonial competition being increased, even if it be maintained. Increase of population abroad, and exhaustion of naturally-stored-up fertility, are the principal elements in the question.

I now pass from matters more or less of hearsay and conjecture to my own experience and the experience of English farmers generally. Farmers must live—that is, get some interest for their invested farming capital—or in time (I say in time advisedly, because farmers will very often stick to their farms long after reasonable hope has fled)—in time they must give up the land to others. Supposing a farmer now has capital sufficient for stocking a farm at the rate of £10 an acre, is he wise to invest his money in farming? This, I think, is the question. Is there some prospect of a revival in British agriculture? An English farmer, if he is wise, or even conducts his affairs with ordinary prudence, will first make on paper what he considers to be a fair typical estimated balance sheet for the farm he proposes to rent. On the payment side he will put all expenses for one clear year, and on the credit side, for the same period, all the money or money value he expects to receive. I will take the latter first. Divide the arable land into four parts. Half of the total ploughed ground is to be planted with some sort of white-straw corn crop. If the soil is suited best for wheat, this portion might be the largest. Say the land generally yields $4\frac{1}{2}$ qrs. of wheat, at 36s. per qr., and $1\frac{1}{4}$ tons of straw per acre, at 40s. per ton, the gross receipts per acre of wheat amount to £10 12s.; if our model farm contains 400 acres of arable land, there will be 100 acres of wheat, corn, and straw at £10 12s. = £1,060. Now, for 100 acres of barley, which I should advise be planted after the wheat crop, let us estimate the barley to yield $4\frac{1}{2}$ qrs. at 32s. and $\frac{3}{4}$ of a ton of straw, which the horses and cattle will consume. The 100 acres

of barley, $4\frac{1}{2}$ qrs. at 32s. = £7 4s. per annum, amounts to £720.

I think some gentlemen will take exception to my departure from the ordinary four-course system by planting two succeeding white-straw corn crops. I cannot lay down hard-and-fast rules for rotation when soil, climate, markets, food for farm stock, and many other considerations, all should have their weight in determining this most knotty point, but I am convinced myself that in many instances this policy is a wise one. Two successive white-straw corn crops, followed by two years of preparation crops, will give more return than if the exhausting crops were alternately interlarded with what are usually termed green crops. Starting with wheat: this can be planted in better time, and certainly cleanness, tilth, and condition as to fertility would all be increased by the two years' preparation instead of one. Then the succeeding barley crop, although not so bulky, will be of better quality, and if the barley is for malting purposes, the brewer gives a decided preference to barley grown after a corn crop. Again, the season for planting is generally earlier, and spring cultivation of the seed-bed is reduced to a minimum in the case of barley after wheat. I must here remind you that I have credited the account with all the wheat-straw grown, not even allowing any to be kept back for thatching ricks or repair of thatched buildings, and as all the barley-straw grown will be cut up into chaff for winter consumption there is no litter for cattle or sheep yards. If this inconvenience is too great, and yards must be bedded with straw, the policy can be reversed, only a deduction of £250 must be made from the £1,060 which I have placed to credit for the wheat crop.

To revert to the farmer's typical balance sheet which he is framing with a view to taking the farm. Besides the receipts from the sale of wheat and wheat-straw and the

barley, what other source of income has the farmer? Certainly his live stock, reared on the produce of that half of the ploughed ground unoccupied with white-straw corn crops, amounting to 200 acres. The list of possible preparation crops is a long one, and would include beans, peas, potatoes, green vegetables, clover of many kinds, rotation grasses, saintfoin, lucerne, vetches, trifolium, rye, winter barley, swedes, turnips, rape, cabbage, mangold, and, if you like to add maize and sorghum, I think the possible list is sufficiently suggestive, if not complete. The farmer must make up his mind what class of sheep stock he thinks likely to suit the conditions best. If a flock of lambing ewes, suitable food and lodging must be provided for them all the year round. If the farmer decides that he cannot keep a breeding flock his calculations are much simplified; in fact, he need only buy in his sheep when his root crop is assured. But this root crop, which is so dear to the hearts of four-course farmers, is, I believe, in the southern part of England a source of immense expense, and the mutton manufactured gives a small return. In the north and west, turnips can be grown much more easily and with greater certainty of obtaining a crop, but in the drier south mangolds produce a greater weight; *but all these root crops*, in my opinion, are necessary evils, and should accordingly be reduced to a minimum. If my opinion is not sound, would any farmer prove his faith in the theory that roots pay, and plant half his entire ploughed land with roots and the other half with clover or rotation grasses? If this system will not pay, I contend that I am right in stating that root crops are a loss, and are only grown to fill up a gap in the yearly bill of fare of the farm live stock, or to manure the soil for a subsequent corn crop, which corn crop has to pay the farmer not only the expense attending its own production, but the debt from the previous year's root crop.

I will surmise that our farmer elects to keep 400 breeding ewes. They are to be kept, and their lambs are to be reared on the produce of the 200 acres of arable. He should therefore proceed to plant his land something in this way (I am speaking of the southern of South Midland districts).

To feed 400 ewes and 400 lambs from—

	Acres,
1st May to 31st: (1 acre a day) rye and trifolium	- 31
1st June to 30th: (1 acre a day) winter vetches	- 30
1st July to 31st: (1 acre a day) winter and summer vetches - - - - -	- 31

MEM.—*The first cut provides 62 tons of hay for winter.*

1st Aug. to 31st: (2 acres a day) lattermath clover, saintfoin, and rotation grasses - - -	} 62
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1st Sept. to 30th: (1 acre a day) rape, cabbage, turnips, after rye and trifolium (30 acres, see above)

1st Oct. to 31st: (1 acre a day) ditto, after winter vetches (31 acres, see above).

To feed 400 ewes only, from—

1st Nov. to 30th: (1 acre a day) mangold leaves (30 acres).

1st Dec. to 30th April succeeding: mangolds, 20 lbs.

per head per diem - - - - - 30

16 acres of beans or peas fed to the lambs - 16

200

This latter calculation gives a large allowance of roots, and the 62 tons of hay off the 62 acres gives 3 lbs. of hay per diem for each ewe. But the stores of mangolds and hay will be both diminished by the amount consumed by the young lambs, and if there should be a few mangolds left till the *summer hot weather* they will be most useful. I have left out many small matters which might be improvements, notably the advantage in dear seasons of selling hay, or even

roots, and purchasing cheap oats, maize, Indian peas, or English cake. Another point is, how are the ewes to lamb and fold through the winter without straw? The wheat-stubble, the saintfoin, or clover-lays or rotation-grass, would generally give good lodging, and shedding should accommodate the ewes while actually lambing. I do not, however, set up this plan as a standard; only to prove that our farmer's receipts from his 200 acres of preparation land would be in this case 400 lambs from 400 ewes, to be sold before 1st November in each year, at 30s. each - - - - = £600

The wool from the 400 ewes should sell for another 100

Total - - - - - £700

But the depreciation of the 400 ewes and 5 per cent. mortality necessitate a reduction of - 100

Net receipts from sheep for the 200 acres - - £600

The wheat and wheat-straw - - - - 1060

And the barley only - - - - - 720

Total receipts - - - - - £2,380

Now, what are the farmer's expenses for one clear year—Labour, horse-corn, seeds and seed-corn, tradesmen's bills, insurance, rates, tithes, and, lastly, rent.

Labour is a very large item in the farmer's expenditure. How can this be estimated? I only know how to reckon the different items of manual labour connected with the wheat crop, the barley crop, the root crop, and the hay crop. The horses, for the sake of brevity, I may reckon at three for each 100 acres, equal to 12 horses on the 400-acre farm. Carters to attend and drive these horses would cost on an average £15 per horse = £180 per annum. Shepherds would cost £75, and ordinary day labourers' wages on the 200 acres of corn, at £2 per acre, would be £400. On the

30 acres of mangolds and the 16 acres of beans, 50s. per acre = £115. The expenses of hoeing the crops of rape, cabbage, or turnips, grown after the spring green crops, 10s. per acre = £30 10s. And the labour of making, stacking, and thatching 62 acres of hay, say, 10s. an acre = £31, Bird-scaring, hedging and ditching, repairs to farm roads, washing, dipping, and shearing sheep, water-furrowing, possibly chaff-cutting, and sundry labour, say, £50; making a grand total of £881 10s. The purchased horse-corn for 12 horses for one year, I estimate at £16 per horse. This seems excessive, as the usual farm-horse allowance is about two bushels of oats a week for eight months of the year, and one bushel per week for four months; but then horses get an allowance of hay through the winter, and green fodder in the summer. As no allowance is made for either of these items in this calculation, which I judged would overload my Paper with details, I have put each horse's oats at 20 qrs., and the price 16s.; total for the 12 horses, £192. Seed-corn for planting the 200 acres would cost £95, and the other seeds required would come to £72. Tradesmen's bills are a heavy item on a farm: the blacksmith, £25; wheelwright, £25; machinist and ironfounder, £25; carpenter, £15; hurdle maker, £5; plumber, painter, glazier, £5; the coal merchant, £10; the harness maker, £10; and the sack maker, £5; total, £125; and to this sum must be added veterinary surgeon and farm medicines, £10, and fire insurance, say, £5 more.

The question of local rates has been a vexed and vexing question for years past. The whole system of our poor-law relief, with its elaborate machinery for raising and disbursing money, has become so ingrained that we have ceased to feel that cutting sense of injustice which such a one-sided arrangement would otherwise cause. Why, indeed, should

the land be saddled with almost the entire cost of maintaining those persons who, by their misfortune or fault, have failed to make a living at their various trades, or who have got into an idle shiftless manner of life, and refuse to yield up that modicum of perspiration society demands of them? Why should the landlords maintain highways at their own expense for all other persons to use free? Formerly all persons contributed in the shape of turnpike tolls; now, having escaped this payment, they, naturally perhaps, but unfairly, object to share the cost of those advantages they mutually enjoy. Why should lunatics, or police, or sanitary regulations and expenses be borne almost entirely by the land? Why should mechanics' children and farm labourers' children, who have, in many instances, no intention of following the plough, be educated for other lines of life at the expense of the landlord? Granted that the amount of the total rates might not be more than 2s. in the £ without a school board rate, or 3s. in the £ with, and that, at present farm rentals, an alteration might not make a difference of more than eighteenpence an acre, this does not do away with the injustice. I am sure our best thanks, as landlords, land-agents, and farmers, are due to the present Chancellor of the Exchequer for his honest efforts to rectify this injustice. One moiety of the new probate duty, it is proposed, shall in future go from the Crown purse towards local rates, also various excise licences. I think our best thanks are due to Mr. GOSCHEN; many men and many Governments have talked of these or similar alterations, but all previous efforts have come to nothing.

Well, I must allot some sum of money for the rates that in future our farmer will have to pay, even under the new system, on his 400-acre farm—let us say 1s. per acre,

equal to £20. The only other item is the rent. This is generally payable to two owners. I cannot myself see that the farmer has any grievance in writing two cheques each half-year for rents, one for the man called the landlord, and the other for the person called the tithe-owner. Even supposing the farmer does not appreciate the advantages of the Church of England, two-fifths of the tithe are the property of other persons, and only three-fifths go to the ecclesiastics. Suppose, for instance, the landlord is a Roman Catholic, does a Protestant tenant consider it a part of Christian morality to refuse to pay him rent? No. I do not wish to speak too harshly of those who do not see with my eyes, but I fear avarice prevents them from seeing things fairly; and although I think the "Corn Returns Act" may be improved and made to fulfil its purpose better, with this exception, I see no advantage in further legislation unless it be to propound an equitable scheme of redemption. This is, I think, the true remedy, and the only way in which both parties to a bargain made fifty years ago can be relieved of embarrassment and dangerous friction. As to the cry raised in some quarters for a readjustment of the tithe, was anything more preposterous ever seriously suggested? How can land, perhaps freed from tithe by a lump-sum payment, land freed from tithe by a portion of the freehold being given up to free the remainder, land built over by towns, run over by railroads, land purchased or inherited with a certain charge upon it, be ever fairly re-apportioned? But the redemption scheme is fair and reasonable, and in course of years would add from 20 to 80 per cent. to the value of a large quantity of light arable land. The idea is, doubtless, well known to all. Government can now borrow money in any quantity at $2\frac{1}{2}$ per cent. Tithe rent-charge at its present selling value is 25 years' purchase on its present value, or 20

years' purchase on its originally-apportioned value. If the land paid the full tithe rent-charge apportioned for a series of years, there would be a sinking fund of $2\frac{1}{2}$ per cent. available, which in about 28 years would extinguish the payment of the tithe for ever; or if the value of the tithe is taken at £80, instead of £100, a more lengthened period would be necessary, for there would be only $1\frac{1}{2}$ per cent. available for the sinking fund.

But if tithe is only rent, this question as to who the tithe is payable to, or whether the land is tithe-free, is a matter of no importance to the tenant. With regard to the policy of freeing lands from various charges and imposts, I would quote the opinion of the late Lord St. LEONARDS, who, when asked whether he thought it desirable from the landlord's point of view to buy off the various charges on land, said no, it was, in his opinion, not desirable, lest a succeeding Parliament should reimpose them. Our typical farmer then pays 8s. an acre to the owner of the tithe rent-charge. Now, what is there left for the landlord? This is a sad business, and I sincerely lament that our landowners should lose nearly half their incomes. I believe that, with fractional exceptions, the landowners of this country have acted in the past most fairly, considerately, nay, generously, to those who rented their lands, respecting their tenants' preferences, and rarely pushing their powers as owners to the utmost commercial point. True it is that many owners raised their rents, and most natural and proper it was at the time when men were rushing over each other, or standing ten deep to get the offer of a farm. I make no complaint of the action of landlords generally throughout the country. I would give, rather, unstinting praise where praise is justly due; but now, in consequence of the depreciation in the value of wheat, amounting to 20s. per quarter, the incomings of the British

farmer are reduced from £12 12s. per acre of wheat, reckoning good land to grow $4\frac{1}{2}$ qrs. and the corn to sell at 56s., to £8 2s. per acre of wheat, the present price being 36s. instead of 56s.

Rents, then, must be put down to correspond with diminished receipts; they have in many instances fallen to half, even on good arable land; and on poor land with, proportionately, a still heavier apportioned tithe rent-charge upon it, some landlords have now very little rent left. But my arguments are intended to prove that there is no prospect of still lower prices, and that foreign competition is likely to be less severe as population increases. I believe there is a genuine and growing demand for farms rented at times prices, and if confidence is restored the investment of money in land will again be the favourite investment. The old plan of reckoning the value of land by the number of years' purchase of consols was really fair, and if this plan should again become general, as I think it will do with restored confidence, how immensely the value of land will rise! The new Government loan at $2\frac{1}{2}$ per cent. must compare badly as an investment with land which has a future rise in value almost in sight, and which pays an interest now of 3, if not 4, per cent. I think my Paper has been long enough, and I trust I have not wearied you with stale platitudes; but I hope my efforts may bear some fruit by inducing landowners to reduce their rents at once, if they have not already done so, commensurately with the present lower prices of wheat, and so leave the tenant the chance to live himself and properly farm the land. By this means alone can confidence in the value of land as an investment be restored, the future be made brighter than the past, for then there will not be a prospect only, but a real "Agricultural revival."

DETAILS OF 400-ACRE ARABLE FARM.

DR.		CR.	
	£		£
Labour	881	Wheat and wheat-straw .	1,060
Horse-corn	192	Barley (corn only) . .	720
Seeds and seed-corn .	167	Sheep and wool . . .	600
Tradesmen	125		
Veterinary	10		
Fire insurance . . .	5		
Sundries, deaths, repairs .	40		
Rates	20		
Tithe	160		
Rent	400		
	2,000		
Tenant's interest on £4,000, and return for his own skill and labour . .	380		
	£2,380		
			£2,380

Mr. W. J. BEADEL, M.P. (Past-President), in proposing a vote of thanks to the author for his Paper, said that anything in the shape of an agricultural revival, or even a prospect of it, commended itself seriously to all connected with the management of land. He did not propose to criticise the various details of the Paper, because upon a subject of the kind general discussion was more profitable. He could not believe that foreign countries would continue to grow corn and send it to Great Britain at the prices now ruling, so much to the detriment of owners of property as well as of occupiers of land. No doubt prices would increase as foreign producers ceased to find their export to this country profitable, but he pitied the British agriculturist if he had to wait for the millennium shadowed forth by Mr. WELLS, viz., the increase of the population of America to an extent that would prevent their exporting wheat. He quite agreed that, as the population of America increased, there would be less of the bread-stuffs which they grew to spare for foreign trade; but it must not be forgotten that

America had yet an almost unlimited extent of virgin soil, only requiring to be drawn into cultivation by the means which were at easy command, namely, facilities of carriage to the sea-board by the making of new railways.

He was glad to find that in the Paper the fact was recognised that the landowners of this country had, so far as they possibly could, done justice to their tenantry, and had shown their sympathy by reduction of rentals and by meeting the tenants in every possible way; but he thought Mr. WELLS went rather too far in suggesting that the landlords should still further reduce their rents. He was perfectly certain many landlords were in such a position that if they reduced their present rents they would get no income at all. Some lands had suffered more than others: the purely wheat-growing lands, the clay subsoil lands, which until the late depression produced the very best wheats, could not in some cases be cultivated now at a profit, even if at a nominal rent, and free of tithe and rates. This was a lamentable state of things, and it behoved those who were connected with the landed interests to adopt such means as would encourage the growth of wheat to the greatest possible extent. It need not then be feared that there would not be a fair return, both for those who tilled the land and those who owned it. With regard to what was said in the Paper about growing two white-straw crops in succession, his experience was that the five-course shift (as distinguished from the four-course shift) was frequently adopted. He did not quite understand the two years' preparation crops for growing wheat. If two years' preparation with grasses or something of that kind was intended, where was the farmer to get roots to feed the ewes which were to bring him in so much a year? In the balance sheet given at the end of the Paper there were only three items on the credit side. The first was

“wheat and wheat-straw, £1,060.” That was on the basis of a yield of four and a half quarters of wheat per acre; but the average, taking the kingdom throughout, was under four quarters. Mr. WELLS also took the land to yield one and a quarter tons of straw per acre, at 40s. per ton; but in districts without facilities of carriage or convenience of communication, wheat-straw, he need hardly say, was not worth anything like 40s. a ton to the farmer. No farmer who carried on his farm really well could afford to sell the whole of his wheat-straw. Therefore the first item should, he thought, be reduced to £765. With reference to the figures given for barley, he believed that most barley, in the home counties at all events, was sold lately under 30s. per quarter, and a yield of more than four quarters per acre could not be depended upon. Taking barley at 28s., four quarters to the acre would give £512 instead of £720. After all, the credit side of the account was the most important thing to the farmer, who had to regulate his proceedings entirely by the test of what he could get when he went into the market—what he could pay into the bank. From its very commencement a farmer’s life was a life of hope; when he planted his corn he hoped it would grow, he hoped it would ripen, he hoped for a good harvest, and he hoped for a good market, and until he knew what the market was it was utterly impossible for him to realise what the credit side of the account would be. Now, if the figures were altered as he had suggested, there would be found £1,925 on the credit side, as against £2,000 on the other. Clearly there were some omissions on the credit side, and inaccuracies in the balance sheet which Mr. WELLS would be able to explain in his reply. The author had, on the whole, put the matter fairly in his very able Paper, and had given in it a large amount of very useful information.

Mr. JOHN SHAW (Fellow) had much pleasure in seconding the vote of thanks. He agreed with Mr. WELLS in recognising various signs of agricultural revival, but he could not agree with the statement that "farm lands sell "more freely now than they did." Occasionally good prices might be obtained, but only in cases where people did not care much about selling. His experience of farming lands forced into the market was that no higher prices were to be obtained now than those of a few years ago. It was extraordinary that this should be so, because, in his judgment, land under any circumstances, at anything like existing prices, must be one of the best investments. He might cite an instance of property, which only a few years ago was worth in the market £75,000 or £80,000, having been recently sold for a little over £50,000, and with mortgages allowed to remain the purchaser got 5 per cent. for his money on present rentals. In another recent case land did not realise anything like two-thirds of its cost some eight or ten years ago. He was old enough to remember former periods of depression in land, more especially the depression which followed the Repeal of the Corn Laws. Everyone then seemed frightened; and he believed that there was a somewhat similar scare at the present time. Notwithstanding the statistics given in the Paper as to the exportation of corn from the United States of America, Russia, and India, he did not see much probability of a rise in prices for some time to come, and wheat could not be grown in this country at the present prices, although straw had much increased in value.

He differed also from Mr. WELLS with regard to meat production. The importation of meat was a very important factor to be considered by the British agriculturist, and it was impossible to forecast its effect. There was no doubt that good English beef and mutton would always have the preference in the English market, but prices must be

affected by foreign supplies. In his district (Derbyshire) graziers had, this year, done very well, and, with the low price of feeding stuffs, if the markets were watched, a very satisfactory profit could be made. The calculations given in the Paper certainly did not apply to his district, where the cheese question, the milk question, the butter question, and other smaller matters were all most important, and materially affected the profit or loss on the farm. As to root crops being merely necessary evils in the cultivation of a farm, he considered that although they were expensive, yet as rotation crops, and for keeping cattle in good heart and condition, they were invaluable. But the ensilage question affected the matter very considerably, as by making ensilage it was possible to supply succulent food to the cattle in the winter without so many root crops, and this had been done successfully during the present year.

He thought that very excellent and universally applicable advice was contained in the passage, "An English farmer, if he is wise, or even conducts his affairs with ordinary prudence, will first make on paper what he considers to be a fair typical estimated balance sheet for the farm he proposes to rent."

The tendency of farmers, unfortunately, was to take too much land in proportion to capital. He noted that in the balance sheet given in the Paper no notice was taken of contingencies, but every practical farmer knew that this was an item which had to be taken into account. On the whole he agreed with Mr. WELLS that under present circumstances a practical man having sufficient capital might be wise in taking a good farm under fair and proper conditions. According to his experience the prospects were really better. Beef and mutton had this year sold very well; and moreover there had recently been introduced the breeding of horses, which in his neighbourhood had proved a valuable

adjunct and a great advantage to the farmer. Things were undoubtedly looking up; he could not explain why, probably because there was greater confidence.

Major P. G. CRAIGIE (Visitor) thought there could be no subject more likely to stimulate interest than the probability of a revival of agriculture. When the Paper was perused by farmers throughout the country he was sure that the hopes which had been somewhat languishing hitherto would tend to revive. He was of opinion that in the balance sheet given in the Paper hardly enough had been allowed for taxes, and too much for tithes. The whole of the tithe collected in England only amounted to four millions, and when the number of cultivated acres was taken into account it would be apparent that 8s. was too large a figure for average tithe, even allowing for tithe-free land. The figures given in the balance sheet for labour represented 44s. an acre; would the gentlemen present be prepared to endorse this as an average throughout England, even for arable farms? No doubt there were classes of cultivation which cost even more than that, but as a fair average he would suggest a considerably lower figure for labour. He would ask the author of the Paper whether the amount put down for "labour" included anything more than merely manual labour; did it include horse labour, depreciation of plant and machinery, and so on? All must agree with Mr. WELLS in what he said of the great efforts that had been made this year in Parliament to lighten the burden of taxation upon land, and must equally deplore the unfortunate results which had befallen one of those efforts, when it was remembered the amount that every farmer had to pay for the maintenance of roads, as compared with the driver, the miller, and the brewer, who had gained largely by the abolition of turnpike tolls.

The proposed taxes had been called taxes upon conveyance, and otherwise objectionable to the modern economist; but the tax which had to be levied in substitution for the tax lost, to make up the £700,000 which the rates had now to find, was, so far as it fell upon land, a tax upon food. As to the very large question of the future of foreign competition, he could not attempt to guide opinion on a matter of the kind: every person must judge for himself; but Mr. WELLS had very carefully and elaborately placed before the Meeting the facts so far as statistics were available. The increase of the population of the United States was a factor, but it was only one factor in the case. It must not be forgotten, that even if the United States were left out of account, there were other elements to be considered. Russian exports to this country were nearly five times greater than American in November. Then there were the great plains of the River Plate, where there was a future much more difficult to discount than that of the United States. He thoroughly agreed that there could not long be kept up a series of prices so severely against the grower as those at present existing all over the world. The Statistician of the American Department of Agriculture at Washington very recently, summarising the drop in wheat prices over the whole world, stated that nowhere had the fall been so severe as in the United States. The decline from 1881 to 1886 in the price of wheat in America was 42 %; in Great Britain it was only 32 %; in Austria it was equally 32 %; in Germany, with her very heavy protective duties, it was 31 %; in France it was 24 %. So that the United States stood at the head of all those countries in the fall which had occurred in the price of wheat. He thought that that fact supported Mr. WELLS' contention.

Again, 20 years ago the greatest crop that the great American Republic was producing was maize, although it was

not so largely exported. At that time, taking the yield at about what it is now, 22 to 24 bushels an acre, he found that the value of every acre to the American farmer was, in 1867, £3 16s.; whereas last year it had sunk to £1 12s. This was a more serious depreciation than anything we had to face here. With regard to wheat, 20 years ago the average American wheat crop realised £4 12s. per acre; to-day only £1 14s. In face of such figures he thought there was some ground for hope that the stream of competition against which the British agriculturist had been contending was at all events being gradually, if very gradually, dried up from that particular quarter. But he must repeat the remark that, when the competition of the United States had been disposed of, the whole question had not been dealt with.

Mr. J. MARTIN (Fellow) agreed with Mr. BEADEL's criticism of the amount put down in the balance sheet for labour. He knew many 400-acre farms in Lincolnshire where labour only averaged 20s. or 22s. an acre, and the total average might perhaps be put at 30s. The argument as to the tithe was scarcely fair. If rent and tithe had been put down together at £560, there would have been no dispute; but, if it was contended that the tithe was only 4s. an acre, surely the rent ought to be 24s., assuming that Mr. WELLS was right in saying the farm was worth 28s. an acre. If the tithe was lowered, the rent must be raised.

Mr. J. W. CROSS (Visitor), looking at the matter from a business point of view, thought that Mr. WELLS rather over-estimated the effect of the increase of population in America in the way of limiting future exports of food products, and hardly sufficiently took into account the enormous increase in the facilities for railway transportation. America had doubled her railroads in the last ten years.

Ten years ago she had 80,000 miles of railroad; to-day, 160,000, 20,000 miles of which had been built in the last 18 months, the greater part west of the Missouri River. In that period she had spent 500 millions sterling in actual money, the securities issued being something like 800 millions sterling. Ten years ago there was a population of 45 millions; to-day, 62 millions. Having regard to the enormous increase in population and in railroad facilities, it was clear that, whatever the price of wheat in England, production would be increased, because each unit of the increased agricultural population produced more food than he consumed.

Again, there was Canada to be considered. And the fact that hitherto Canada had been no great exporter of wheat was no proof that she would not be so in the future, the Saskettewan Valley having only just been opened up. Then there was the great development of the River Plate. Within the last few months railways had been guaranteed by the Buenos Ayres Government to the extent of some 40 millions sterling. Those lines would run through virgin soil, and on that virgin soil there would be grown wheat, and, whatever prices ruled, that wheat would come to this country. So far from foreign competition being on the wane, it was only in its infancy—it had scarcely begun. He quite admitted that, withal, land in England might be a very good purchase at a price; indeed, he was not prepared to say that he would not rather invest in English land at a price than in the stocks of the American railroads he had referred to; but it was a mistake not to look facts in the face; and, looking at all the facts, he would be a very bold man who would prognosticate that under existing conditions of European peace, and a gold standard of value, the average price of wheat, and other agricultural produce, would rule higher during the next ten years than during the past ten years.

Mr. ALBERT PELL (Visitor) remarked that the Paper under discussion might well have been headed, "Prophecies upon an agricultural revival." There was a great deal in the early part of the Paper with which he concurred, so far as regarded the possibility of producing certain articles better in England than elsewhere; for instance, good fresh meat, that had not been subjected to the debasing influences of the refrigerator, or the equally debasing influences of the dead-meat market in London or in the central towns. But when Mr. WELLS proceeded to draw up his encouraging balance sheet relating to an arable farm of 400 acres—it was not stated where the farm was, but looking at the rent it commanded it could not be very bad land—he could not derive the hope from that formula which Mr. WELLS had extracted from it. He quite agreed with what Mr. BEADEL had said about straw. As an old-fashioned farmer he had never yet been brought to see the propriety of parting with even a truss of straw. The amount of capital calculated for cultivating this 400-acre farm seemed too much. The proper measure of the capital required was frequently, and, he thought, correctly, estimated at exactly what the farmers would sell up for, and it could not be said that the arable farmers of England would sell up for £10 an acre. He disagreed with what Mr. WELLS said as to taking a crop of barley after the crop of wheat. That could only be done in those parts of England where there was a very small rainfall, and opportunity was afforded of doing something with the wheat stubble before putting in the barley, otherwise there would be a difficulty with the twitch. On the credit side of the balance sheet Mr. WELLS had omitted to take into account the smaller profits of the farm; there would also be little services to be done for the farmhouse, and the farmer uses some of the produce for his own consumption: all those small matters must be considered.

Speaking of the Paper generally, he did not think there was any royal road to making money by farming now whatever might have been done in the days of Mr. HUDSON and Lord LEICESTER. Successful farming depended upon attention to small economies. As to the better time coming, it was like the wind described in the Gospel of St. John—one heard the sound of it, but knew not whence it came nor whither it went, though he was satisfied that things were better now than four or five years ago. He himself was a small landowner in the midland counties, and in that district, in some unaccountable manner, rents had dropped away to nothing. His land was cut up into small grass holdings, and at the beginning of this year every one of his tenants wished to quit; but now all but one wished to remain. That was very strong evidence in favour of better times.

He would add one word with regard to straw. He knew a case where wheat-straw was sold at no less than £10 an acre. It went to Luton for the manufacture of straw-plait; and the straw-plaiters themselves stripped the grain off the straw and prepared the latter for manufacture. This was one of the many ways of making profit out of land; although it was obvious that there was a limit to the special sale of straw in that way. It was impossible for any man to prophesy from what direction the better times might come, or the causes of them; but he was convinced that the best thing to be done with land was to stick to it—not to launch out, but to farm cheaply, and humbly, even meanly, paying unceasing attention to the smallest economies.

The vote of thanks having been put and carried unanimously, the discussion was then adjourned to the next Meeting.

AT
THE ORDINARY GENERAL MEETING,
Held on Monday, January 14th, 1889.

MR. ELIAS PITTS SQUAREY (PRESIDENT) IN THE CHAIR.

The discussion on the Paper, entitled "The Prospects of an Agricultural Revival," by A. D. WELLS (Associate), read at the Meeting of December 10th, 1888, was resumed.

THE PRESIDENT said he had the painful duty, before the proceedings of the evening commenced, of referring to the death of their late President, Mr. CLIFTON, and of their Vice-President (retired from the office for some years), Sir HENRY HUNT. Mr. CLIFTON had been from the first a most useful and valued Member of the Council, and by his directness of thought and capacity for grasping all the surroundings of every situation, whether in professional life or in connection with matters before the Council, had conferred signal services upon the Institution. Personally, he (THE PRESIDENT) knew him well, and there were, no doubt, many present who also had that great privilege, and who must have recognised the striking ease and readiness with which he turned from active business to the ordinary topics of society, and the wonderfully able and well-informed way in which he dealt with every subject that came under his cognisance. He (THE PRESIDENT) had happily also been on terms of great intimacy with Sir HENRY HUNT, and very many present must have met him in some of his very varied capacities. It was hardly possible to meet him socially or professionally without

learning something valuable, and his firm yet courteous manner of conducting business was a lesson to everyone who had to follow in his steps. He felt he was expressing the feeling of the Meeting when he said that by the loss of these two men the Institution had suffered greatly.

Mr. J. W. KEMSLEY (Fellow), in resuming the discussion upon the Paper, said, whatever might be thought about the conclusion to which Mr. WELLS had come, he was sure that everyone was ready to congratulate him on the choice of the subject which he had brought before the Institution. He ventured to suggest another and kindred subject to Mr. WELLS, or to the Council of the Institution, or to any who might be ambitious enough to undertake it—he referred to the question of the profitable management of farms in hand, which was at present a very sore subject, and which, notwithstanding the hopeful tone of Mr. WELLS' Paper, he feared would have some interest to most surveyors for some time to come.

In discussing the Paper, he would, for convenience' sake, take the latter half first, namely, Mr. WELLS' balance sheet. The first item was labour £881, or 44s. per acre. Exception had been taken to this as being too large a labour bill if a profit was to be made. He had been looking at the labour sheets of some farms in his own occupation which might be interesting to the Members present. The first was a semi-market-garden farm of 205 acres in the neighbourhood of London—say, 10 miles from the Post Office—three quarters of which was arable and one quarter grass. He found that the labour bill on that farm for the last year, ending Michaelmas 1888, was £561, or 56s. per acre. Then he might instance another—a rural farm, 335 acres, about half and half—on which the labour was £540, or 34s. per acre.

On another farm of 488 acres, consisting of 308 acres arable and 180 acres grass, on which there had been a good deal of steam-ploughing done, the labour amounted to £861, or 35s. 6d. per acre. On a fourth farm of 630 acres, of which 510 acres were arable and 120 acres grass, the labour bill was £1,521, or 48s. per acre. He thought, therefore, that, whoever criticised Mr. WELLS on his labour sheet, it was not for him (Mr. KEMSLEY) to do so. He thought that on grateful land where no fallow was made it was a great mistake to starve the labour sheet, provided one got value for money, or to leave work undone in order to save a few pounds on labour. Depend upon it, sooner or later, such saving would prove to be false economy. Work that required doing should never be neglected on the ground of expense of labour; and, in his judgment, labour should always, where possible, be done by piecework. He thought a great deal of the loss on many farms was to be attributed to the system of day-labour that was so much in vogue. His own practice was to let everything he possibly could—not only ditching and hoeing,—which everyone let,—but the carting of hay as well as the cutting, and the winnowing of corn as well as the threshing. He found this system work economically, and, with a capable foreman and labourers, a price could always be arrived at which was satisfactory to both master and men.

The next item in the balance sheet to which he would refer was “Sundries, deaths, repairs, £40.” He congratulated Mr. WELLS if he were fortunate enough to keep to that sum. “Sundries, deaths, and repairs,” with influenza amongst his twelve horses, or disease amongst his 400 sheep, would, he thought, be represented by another figure than the £40 which had been put down for the purpose.

Another item was “Rates.” He only mentioned it to emphasise, as he thought they should all do, what

Mr. WELLS said as to the injustice of burdening real property with such excessive rates. There were many other kinds of property in this country which should contribute to its burdens, and which, without the protection which the rates gave, could not be enjoyed. He could never understand why the wholesome system of the sanitary rate should not also obtain in the rate for education, or why land and the farmer, who derived no benefit, *quâ* farmer, from the education of the children, should be called upon to pay such a large proportion towards it in every country parish. He was not speaking against the education of the labourer's children, but against the principle that drew the cost of that education mainly from the pocket of the farmer.

Again, there was "Tithe," which Mr. WELLS rightly called rent, and from the farmer's point of view it should be called rent; but a difficulty had arisen in his own county where the land was not worth the tithe upon it, and was lying uncultivated because nobody was found to pay the tithe. He very much objected to disturbing old institutions; but it seemed to him that if ever a little bit of sharp legislation was justifiable it was in the matter of tithe, where the tithe-owner was drawing the entire rent on the farm, and the unfortunate landowner was not drawing a penny. There should be some rough-and-ready way of dividing the proceeds, instead of the tithe-owner taking the whole.

The last item was "Rent." This had been defined as the margin of profit left after the cost of labour, the expenses of cultivation, and the maintenance of the farmer, had been defrayed. There was a natural law here which could not be gainsaid.

He rather differed from Mr. BEADEL when he said at the last Meeting that some landlords were unable to reduce

their rents any more. He agreed it might be so from the landlords' point of view, but looking at it as a practical fact, this conclusion was inevitable—that, until the expenses of cultivating the land were paid, there was no margin whatever for rent, and, if the land did not pay for the expense of cultivation, it must either go out of cultivation or be let rent-free. That was a fact which he thought no one could controvert.

One of the greatest national dangers which had to be provided against was the possibility of the land going out of cultivation because it did not pay the expense of cultivation. It was upon that being averted that he imagined all hope of an agricultural revival rested. He remembered some years ago an old friend of his, a farmer, going to pay his rent, and his landlord saying to him, "Well, BROWN, can you make both ends meet still?" "Well," said the farmer, "that is not exactly it, sir; we like a little bit to lap over." It was, he thought, the little bit that lapped over that was the landlords' property, and the question now was, was there a hope of such a bit to lap over remaining? He ventured to reply that in his judgment there was, but not on the lines of the credit side of the Paper, and with a labour sheet of 44s. per acre. After Mr. WELLS had sold every handful of wheat-straw, and allowed four shillings a quarter more for his wheat and barley than he (Mr. KEMSLEY) could make of his, he showed £380 profit on his 400 acres, with a capital of £4,000. If a friend came to him and said, "I have read Mr. WELLS' Paper, I have £4,000, I am a practical farmer, would you advise me to go into farming on Mr. WELLS' lines?" he would unhesitatingly say to him, "My friend, it is not good enough; you had far better invest your £4,000 at 5 per cent. and get £200 a year, and, if you are sharp enough to farm profitably, your wits ought to get you the odd £180 in a much easier

way." He did not say that a sharp practical man ought not to invest his £4,000 in taking a farm, but he thought that, in most cases, he must have more than five lines on the credit side of his account (and Mr. WELLS had only five lines on his, viz., wheat and wheat-straw, barley, sheep, and wool). He said "in most cases" for it was of paramount importance to take into consideration the district in which the farm happened to be.

He had recently met with an illustration of adaptation to special circumstances on some cold, hungry land in the western counties, and which would probably be within the knowledge of THE PRESIDENT or some of the west-country Members of the Institution. The system was this—no white-straw crop was grown, except what was called dredge corn for feeding cattle (a mixture of barley and oats), and that on only a small portion of the land. The stubble was broken up in the autumn and made into fallow, and in the spring or early summer was sown down with the ordinary mixture of grass and clover seed, with the addition of some rape. This rape was food for the sheep in the late summer and autumn, and the grass was laid down for two or three years until it was fetched up again in rotation for this dredge corn, of which a small acreage was sown every year. By that system the bill for labour (both horse and manual) was reduced almost to a minimum, and next to nothing except live stock was sold off the farm.

Other illustrations might be given of exceptional adaptation to the circumstances of special neighbourhoods and the geographical positions of farms, but he would leave this and hasten on to add just two other words—one about the probable future supply of foreign food, and the other as to future prices, for on those two questions the hope of an agricultural revival very greatly depended.

As to the probable future supply of foreign food, he thought the Institution was very much indebted to Mr. Cross, who, at the last Meeting, had spoken most lucidly and sensibly about the probable enormous future supply from America ; but he took exception to one thing which Mr. Cross had said, viz., that, whatever the prices that ruled here might be, corn must come from America. He joined issue with him there, and to show what he meant he would put the extreme case in which the price of corn became too low to pay the cost of carriage. In such a case it evidently would not come, and, if there were added even a very small charge for cultivation, there might come a time when it would not pay to send it.

He, for one, ventured to say that, looking at the future, he was not afraid of the Yankee. The British farmer had been hit very hard, but had not been killed yet. Only a small fraction of our land was out of cultivation, and, notwithstanding all that had been done, the reports which Members had heard in that room from THE PRESIDENT and others showed that even that fraction was probably diminishing. But, notwithstanding that America sent us all the corn she had, there were some who could still smile with corn at 32s. per quarter, and, looking at the American farmer's labour bill and the large cost of carriage (though he spoke with some diffidence on this subject), he ventured to think there was not much to fear from America if we only did our best. But he candidly confessed that he was much more afraid of the black man than he was of the white man. India, with its cheap labour and silver standard—and he emphasised both those points—notwithstanding the rough and primitive manner in which the land had been cultivated, had sent her wheat in enormous quantities, and, if they should be so fortunate as to make us so *unfortunate* through their introducing an improved

system of agriculture, he was afraid they would inundate us with wheat at the lowest price.

And this word "price" brought him to his last words as to the future of prices. He was of opinion that with our gold standard, one great factor in our hopes of an agricultural revival was the possibility of a large find of gold. He had been studying last week, with a good many headaches, but with considerable interest, Mr. GIFFEN's stiff Paper, read last month before the Statistical Society. He did not pretend to follow that gentleman's elaborate argument; but the result of it might be summed up something like this, so far as this gold question was concerned—That, looking at the probabilities of other countries adopting a gold standard, and looking at the improbability of any large find of gold, the appreciation of gold was likely to continue in the future, and to become even sharper than it had been in the past.

While despairing of any large find of gold, he (Mr. KEMSLEY) turned, in his desperation, to the bi-metallists. He did not profess to understand their theory—it seemed to him very much like using two yard measures of different lengths, and some Government official might be necessary to decide every morning the silver value of ten guineas, on RYDE's scale, before a surveyor could settle his bill! But, notwithstanding that he did not understand the theory, he had lived long enough not to be so foolish as to ridicule everything he did not understand, and he was glad to listen to what the bi-metallists had to teach on the subject. He noticed that their Past-President, Mr. BEADEL, had recently joined the Bi-metallic League, and he was sure that everyone would listen with much interest to anything which Mr. BEADEL might have to say on the subject. Without discussing a matter of which he understood so little, he would conclude by saying that if the thing which the bi-

metallists proposed to do could be done, and if, consequently, prices in this country could be raised, the fact could not fail to have a very important bearing on the subject under discussion, viz., the hope of an agricultural revival.

Mr. S. B. L. DRUCE (Associate) thought that the Paper might be divided into two distinct parts. First, Mr. WELLS had discussed the question of the importation of corn and meat into this country; and secondly, he had pointed out the way in which a man should set to work to take a farm.

With regard to the first point, he thought it was now pretty clearly demonstrated that those foreign importations into this country which specially affected farmers seemed, so far as the countries were concerned from which they had already come, likely to decrease, as was pointed out some twelve months ago in a very elaborate paper read by Mr. BEAR, at the Farmers' Club, and since published as a pamphlet under the sanction of the Cobden Club. He thought that Mr. BEAR took too rosy a view of the position of the English farmer with reference to foreign importations. For however much one might lay the comfort to one's soul that the population of America was increasing so fast that, when the present prairie lands were brought into cultivation, the result of that cultivation would be consumed by the inhabitants of America herself, this must always be remembered—that there were vast territories still in other countries where the increase of produce would go on, and was going on, in a very much greater ratio than the increase of the population. That had been pointed out by Mr. CROSS, who called attention specially to Canada and the River Plate. It seemed to him that there was a prospect that the exportations of farm produce from both those countries would materially increase, and therefore he, for one, did not think it at all wise or prudent, at the present time, to predict

a decrease of foreign importations to this country. The situation must be faced, and the fact considered, that importations were quite as likely to increase in the future as to decrease.

Now, with regard to the second part of Mr. WELLS' Paper, which dealt with the Englishman who was proposing to take a farm, the author said:—"An English farmer, if he is wise, or even conducts his affairs with ordinary prudence, will first make, on paper, what he considers to be a fair typical estimated balance sheet for the farm he proposes to rent;" and then Mr. WELLS gave what, he presumed, must be taken to be "a fair typical estimated balance sheet for the farm" which the man proposed to rent. Now, he (Mr. DRUCE) took some exception to the details of that balance sheet. He thought that, taking the country all through and not only special farms, they would find Mr. WELLS' labour bill rather too high. The Farmers' Labour Bill had lately been considered at some length by Major CRAIGIE, who, brought out his figures at considerably less than Mr. WELLS's—something like 32s. or 33s. per acre, if he recollected rightly.

Again, there was, to his mind, a most serious omission from the debtor side of Mr. WELLS' account. He could not find that Mr. WELLS had put down anything to be spent either on artificial manure or artificial feeding stuffs; but, so far as his own limited experience went, he hardly knew a farm in England where land had been cultivated for generations, which could be cultivated to a profit without some expenditure upon it of artificial manure, or of artificial feeding stuffs which were converted into manure. In point of fact, it had been frequently said that farmers, and especially the best sheep-farmers, spent as much upon artificial manures as they paid for rent.

Then, on the other side of the account, he must say he

would rather not see all the wheat-straw sold off the farm. In this he agreed with Mr. PELL in what he said at the last Meeting. He thought, also, that looking at it merely from the £ s. d. point of view, and as a guide to the farmer proposing to take a farm, it was altogether wrong to put down the sale of wheat-straw at Mr. WELLS' price, because in spite of there being a very considerable demand for wheat-straw in some particular districts and in the neighbourhood of towns, yet, taking England all through, he thought that a large proportion of the farmers had no market for their straw. He was free to confess it seemed to be an anomaly, but the fact remained. He remembered perfectly well that foreign straw was being brought in considerable quantities to Manchester when farmers in the Fens could not get rid of their straw at all. He did not wish to use too strong an expression, but he thought it somewhat misleading to a novice who was proposing to take a farm, and who looked to this balance sheet for guidance and information, to show such a price for wheat-straw.

Again, why were there only five items on the credit side? Were there no horned stock to sell? Was there no milk—no other produce of the farm? He had seen many farm balance sheets, but never one which showed receipts for wheat, wheat-straw, barley, sheep, and wool only. There were other things; nay, even Mr. WELLS himself was not consistent with his balance sheet, for at the bottom of page 75 he spoke of another very material farm-product, from which considerable profit was to be derived, and that was the pig, of which there was not a word on the credit side of his account. He (Mr. DRUCE) ventured to say that a very good business could be done with pigs. In a case of which he knew, the pigs had been folded on grass-land. It was a capital thing for the pigs, and a better thing still for the grass-land, and if anyone had a

piece of pasture-land that was rather rough (grass such as cows would not eat) he could not do better than turn pigs on it, of course taking care to ring them properly.

He felt that the Members were the more particularly indebted to Mr. WELLS for his Paper because at the present time it was a good thing even to talk of revival in trade and agriculture. There was a feeling abroad now that things were better than they had been. The shipping trade and the iron trade were both better, and he thought there was just a slight feeling of improvement amongst farmers. All who could must go on hoping as they had in the past. Many alas, were unable to hope any longer, but those who were left must still go on hoping, and, perhaps, if they kept talking about a revival it might actually come.

Mr. CLARE READ (Visitor) said that, speaking broadly, he agreed with Mr. WELLS' opinions but not with his facts, and he was afraid that the tenant-farmer of to-day, if told that he was now in a much better position than at this time last year, would find that facts furnished a direct contradiction to such a statement. Mr. WELLS said truly that there were more farms let now than previously. He thought that was, generally, the case, but still there was no competition—no offer for some of the stiff arable land of the eastern counties, nor any desire on the part of farmers to invest in those light sheep-lands of Norfolk which were so fashionable a short time ago. But, if a farm were good and of moderate size, there was not only one man, but two or three men, who would venture, at a greatly reduced rental, to take it.

Whether there was more land sold he could not, from his own experience, say. In the eastern counties a good deal of it was *given away*, he believed, within the last year—absolutely given away; for in the county of Essex he

knew of one farm which was sold at £7 an acre, another at £10, and another at £12 an acre. In one of the midland counties a farm of exceedingly good land, valued only last June by a professional valuer of the district at over £9,000, was bought, a month ago, for £5,250. He considered this not selling the land, but giving it away. Then, he thought Mr. WELLS would probably agree with him that the rental of England, in corn lands at all events, had fallen quite 30 per cent.

Labour, however, was not down in anything like the same proportion. Major CRAIGIE said it had fallen something like 10 or 12 per cent. of the actual wages paid to the men, but per acre there was not a much greater reduction than 5 per cent.

On the subject of the other portion of Mr. WELLS' Paper, viz., foreign competition, he took a somewhat hopeful view, for he believed that we had 'seen the worst of it. There were still, of course, enormous importations from America, although he and Mr. PELL (who ten years ago went with him to America) had reported at the time that they did not believe it possible to deliver wheat into the granaries at Liverpool at less than 40s. or 42s. per acre, provided the man who grew the wheat, and the carrier who conveyed it over the American continent, the shipper who took it to Liverpool, and the merchant, were all to have a fair profit; but they had also said that it did not signify what was the price of the wheat here or the cost of growing it abroad, if the wheat was there, it would certainly come over to us.

A previous speaker had said that in future it would not be grown. That would be a very good reason why it should not come at all, for it would not exist; but, if it were grown in America and was not wanted there, there was no other country which would take any large proportion of it, and it would come here whether at 40s., 30s., or less. He remem-

bered saying when he was coming back from America, "Never mind, if we can tide over the next 25 years." Ten years had gone, and it was a bad look-out, he feared, for the other 15; but when once the American farmer began to *farm* his land, little would be heard of his competition, for the English farmer could beat him, he was sure.

Then, as to the competition of India, he agreed with what had been said, that the depreciation of silver must offer a considerable bonus to the Indian grower. If, by taking a golden sovereign over to India, one could buy 26s. worth of wheat with it, that surely was a bounty to the Indian grower; and how that was to be rectified he did not know, but it had been hitherto a sufficient bonus to the Indian people to enable them to send wheat here and to undersell the markets of the whole world. He did not fear anything but depreciated currency and virgin soil in the production of wheat. Australia was not likely to export much just now—she was importing a good deal from New Zealand in consequence of the drought. But he agreed with Mr. DRUCE that the supply of the future must not be expected from those countries only that now furnish it, and that there would be a development of fertile districts in all parts of the world, such as the Argentine Republic and the immense plains of South America. On the other hand the competition of Californian wheat coming through the Panama Canal was, he believed, only in the very distant future. England had certainly, in the past, eaten up the surplus stock of the continent of Europe, but the continental nations were now turning their attention to other branches of agriculture. Denmark had increased her manufacture of butter enormously, and the Dutchman was busily employed in sending us margarine.

Now, to come to the balance sheet, he did not suppose that so amiable a gentleman as Mr. WELLS had an enemy, but if he had, he would not say, like JOB, "Oh, that

mine enemy had written a book!" but, "Oh, that mine enemy had printed a balance sheet!"—a supposititious balance sheet, too, for it existed in the Paper, but was, he thought, hardly likely to be realised in all its details in practice. There was one thing about the balance sheet which struck him strongly, which was, that on a lot of ploughed land Mr. WELLS proposed to sell all the wheat-straw which was produced, and to maintain the fertility of the soil simply by consuming the barley-straw, the hay, the roots, and the odd grain crops grown on it. If this were possible, the farmers of Norfolk must be wasting their money when they spent so large a sum as they did on artificial manures and feeding-stuffs. He did not want to parade his losses, but the following balance sheet would show the result of his working for the year ending Michaelmas 1887.

MICHAELMAS 1886 TO MICHAELMAS 1887.

RECEIPTS.			EXPENDITURE.		
<i>Cr.</i>	£	s. d.	<i>Dr.</i>	£	s. d.
Wheat	688	11 9	Rent and tithes (750		
Barley	829	6 3	acres about 30s.) .	1,128	0 8
Sundries, dairy, poultry, colts, &c. .	221	15 5	Rates	83	1 3
Cattle	1,484	12 1	Labour—		
Sheep	660	4 10	£1276 10s. 4d. .	1,566	1 10
Pigs	124	4 3	Tradesmen's bills—		
Cottage & allotment rents	55	4 0	£289 11s. 6d. .		
	£4,063	18 7	Cattle bought . .	1,001	1 9
Loss	634	4 5	Seed-corn and seeds .	145	10 1
			£757 7s. 7d. .	161	19 10
			Feeding-stuffs . .	595	7 9
			Insurances, fire & hail .	16	19 10
	£4,698	3 0		£4,698	3 0

It would be seen that manures and artificial feeding-stuffs, in addition to oats and beans and two hundred quarters of barley and "off corn"-wheat, amounted to about £1 an acre, and if he had not had this expense he could live; but, unfortunately, in consequence of having it there was a balance very much on the wrong side. The net result of his last four years' farming had been as follows:—

					£	s.	d.
1885. Loss	.	.	.	.	307	15	7
1887. „	.	.	.	.	634	4	5
					£942	0	0

					£	s.	d.
1886. Gain	.	.			22	5	2
1888. „ about.	.	.			250	0	0
(Accounts not completed.)							

					272	0	0
Loss in 4 years .	.	.	.	.	£670	0	0

showing a total loss of £670, without one penny being paid on the £8,000 which he had invested in the cultivation of the farm. The general result of his balance sheet, as compared with Mr. WELLS's, would be this. First of all, with regard to rent and taxes they were about the same. Rates were double. Of course, as he did not sell the wheat-straw, the wheat was a smaller item than Mr. WELLS's; but there were the sales of cattle and pigs. Against that, on the other side, there were feeding-stuffs and manures and the purchase of store stock, which cost in that year something like £1,000.

He would further observe that a great danger looming in the distance was the combination of capital *against* agriculture. It used to be considered one of the mainstays of modern farming, but now no capitalists were buying land, or farming it; banks would not now advance a fair amount to a farmer in distress, but there was not a single bubble or scheme or swindle in the world but found our capital flowing into it. It was an extraordinary fact that the income derived from British capital invested outside the United Kingdom was more than double the rental of the land of this kingdom. This might perhaps account for the fact that we managed to exist as a nation with our very large imports and small exports. The capital invested in foreign undertakings was developing the whole of the rest of the

world, instead of our cheapening production by the accession of capital to the land of this country, and was, in addition, tending to make things artificially dear by the combination of capital in corners, syndicates, and such like speculations. If he might alter Dr. WATTS' words, he would express the position by saying :—

“Satan finds some mischief still,
For idle *gold* to do!”

Mr. P. D. TUCKETT (Fellow) was glad to join in the thanks to Mr. WELLS for holding out some prospect of an agricultural revival, and giving his testimony to the possibility of a farmer getting a living. In that respect he confirmed what was very cautiously and wisely expressed in the Presidential Address, and he was glad to be able to say, now that the autumn rent audits were over, that he also had found an undoubted improvement in the tone of feeling amongst farmers. The serious fall in the price of cheese had made some cheese-making dairy-farmers an exception, but amongst the occupiers of the more ordinary class of mixed, arable and grass farms, he had met with a much more hopeful feeling than was the case a year ago. But it was needful to be cautious not to say too much about this till we were further out of the wood, for the great thing, no doubt, had been the relief obtained from the extreme disaster occasioned by the dry summer of 1887, through the rebound from the very low prices of live stock which prevailed a year ago, by means of which capital which last year seemed to be lost, was found to some extent to be recovered. This had caused farmers to feel more comfortable, and less disposed to give up their farms. Several such farmers, in different districts (of course where the rents had been reduced to meet the times), had frankly told him that they had not done amiss in 1888, but at the same time he did not suppose

any would admit that he had fully replaced in 1888 what he had lost in 1887.

A year ago things looked very serious indeed, but now there was certainly a better feeling abroad, whatever the cause might be, and it was to be hoped it might continue. Among the reasons for expecting some improvement in the future, one was that those farmers who have gone through the trials of the last ten years with any degree of success, and still retained the capital required to stock their farms, were a great deal better men of business than the average farmer of ten years ago—able to make more money and content to spend less—and great credit was due to many of them for what they had done and endured.

There seemed to be several reasons why one might reasonably hope, in spite of all the possibilities of foreign competition, that prices would not get any lower, but probably tend to increase a little. Things often go by extremes, and there was some ground for believing that nobody, in any part of the world, had recently been making much profit out of the recent low prices. The Railways Regulations Act in England and the Inter-State Commerce Act in America would both throw difficulties in the way of exceptionally low competitive through rates, and in the shipping trade there had been a remarkable increase in the rates for freights this year.

Then, in spite of Oriental slowness to leave the beaten track, it seemed to him to be contrary to common sense to believe that if there were (as there is) an enormously increased production of silver, and corresponding reduction in value, its purchasing power in India would remain unchanged. People said the rupee will still purchase as much wheat as ever in India. It might be so, and the change might be very slow; but that could not be the permanent result, if there be any truth in natural laws.

He did not think there was much practical advantage in criticising the details of Mr. WELLS' balance sheet. It was only an hypothetical one, and it related to a farm of very exceptional character, where there were to be no permanent grass land, no horned cattle, and no live stock other than sheep and working horses, and no straw for thatching ricks or for bedding the horses.

As to the special rotation suggested, he did not wish to express any opinion on its merits; but it would be observed that whilst describing *root* crops as unprofitable, and at best a necessary evil, Mr. WELLS introduced an unusually large proportion of *green* or *fallow* crops in the wider sense of the term (122 acres out of 400).

He did not think it fair to challenge the farmer who believed in turnips to devote his land entirely to growing half roots and half clover, for that would be to sow the clover with the previous year's roots, which was impracticable.

There was just one matter which was not at all the main subject of the Paper, and which needed some correction. Mr. WELLS said that the Government could borrow any quantity of money at $2\frac{1}{2}$ per cent. The price of $2\frac{1}{2}$ stock at present was 95.

Mr. WELLS said it had touched 99.

Mr. TUCKETT thought it must be the $2\frac{3}{4}$ per cent. stock, reducible after 15 years to $2\frac{1}{2}$. The old $2\frac{1}{2}$ per cent. stock had a separate quotation, 95 to 96, and, he thought, had never been higher.

Mr. TUCKETT (resuming) said Mr. WELLS had quoted the present value of tithe rent-charge at twenty-five years' purchase on the present average of £80 19s. $8\frac{1}{2}d.$, or twenty years' purchase on the commuted sum of £100; and he had

founded a redemption sinking-fund scheme on the assumption that Government might purchase the tithe with borrowed money, and annually receive the £80 19s. 8½*d.* (or even the full £100 for a limited term). But he overlooked altogether the rates and taxes, which form a deduction from the £80 19s. 8½*d.*, serious enough (with the difference between 2½ and 2¾ per cent.) to enormously prolong the period required to elapse before the tithepayer would obtain any relief.

This was hardly the time or place for a discussion on bi-metallism, but that subject had been mentioned on the he other side of the room as an agricultural remedy, so perhaps might say a few words about it. The speaker (Mr. KEMSLEY) began by saying he did not understand bi-metallism, but that he should much like to have it adopted. He noticed that it was not uncommon for its advocates to say they did not understand it, and it struck him that in bi-metallic literature it seemed never to be intended that the principles and objects of the proposed change should be easily understood by the unlearned. But to a plain man the main purpose and obvious effect of it seemed simple enough, though the details might be complicated. All this century, and before all the great modern outlay of capital, the sole standard of value in this country had been gold—the measure of every contract. Silver coins were only tokens (portions of a sovereign). Now, owing to the immensely-increased production of silver in America, and its consequent great fall in value, which seems to have rendered it wholly unreliable and unsuited to be any longer a standard of value, the ounce of silver which used to be worth 5*s.* could now be bought for 3*s.* 6*d.*, and many people thought it not unlikely it might go down considerably lower.

It was proposed then by the bi-metallists to give to every

debtor the option of paying his debts at the rate of about four ounces of silver to the sovereign, or at present 14s. in the pound.

Of course this would occasion a glorious inflation of prices, and be an immense boon to those who were mortgaged up to the hilt. In fact, it was the old device for paying off debts in a depreciated currency, which had sometimes been resorted to by nations whose credit had been exhausted by wars or otherwise. It was only fair to say that the bi-metallists advance some sort of theory that the price of silver would be to some extent increased by the process, and that so the loss to the creditor would not be so great; but there seemed but slender ground for this, and one knew as a fact that an inflation of prices was the thing aimed at; and one of their great authorities, Mr. GIBBS, said, in one of his pamphlets, that of course someone must suffer, and he proposed that the creditor shall be that someone.

This was a far-reaching question, extending through all English life, and he hoped some of its advocates did not quite realise its character. What would be the effects of a depreciation of one-third in our standard of value, making the old standard 50 % higher than the new one, and the nominal price of everything 50 % higher? Everything the poor man had to expend his wages on would be increased 50 %. Imagine the misery, privation and disturbance of all business till wages had similarly risen 50 %. Then all people living on moderate fixed incomes (from debentures, and preference stocks, mortgages, and the like) would find their purchasing power reduced by one-third; they would have really lost one-third of their assets, whilst retaining the same nominal amount. But this would not be the worst: all railway, gas, and other companies, precluded by Act of Parliament from increasing their rates or gross income, would become insolvent. Thus, if the working expenses of

a railway were 50 %, and its preferential charges 30, leaving 20 % for dividends, the working expenses would rise to 75 %, and if the nominal increase of fares in the depreciated silver currency were unlawful, there might not be margin enough left to pay the preferential charges.

And such a change would not particularly benefit farmers, nor the owners of unmortgaged tithe-free land, because expenses (including rates and taxes) would rise with the prices of produce, and if there was before no margin for rent above the cost of cultivation, it would not create one. But what it would do, would be, where there was a margin for rent, to alter its distribution, taking away one-third of the mortgagee's share.

Such a proposal seemed to him to be a suggestion for a sort of modified national or general bankruptcy, for how else would one fairly describe a general reduction of liabilities without the consent of the creditor?

Sir HENRY CARTWRIGHT (Fellow) said he would not enter into a detailed criticism of Mr. WELLS' Paper, but he would remark, before dealing with the spirit and object of the Paper, that it did seem extraordinary that in his balance sheet Mr. WELLS should have left out all allusion to products which would in future tend very much to bring in the earning of rent to the farmer, namely, cheese, butter, poultry, and pigs; and Mr. WELLS, by saying, "If there is one domestic animal which increases more rapidly than another, it is the pig," showed that he had this in mind, although he left it out of the balance sheet. £300,000 a year was expended for poultry, and an enormous sum for eggs and butter, and he thought those matters should have been taken into account. His experience in the north of Ireland was that those items and cattle enabled the tenants to earn their rent. With reference to the spirit of the Paper, and what it said

as to the present value of agricultural land in this country, his experience caused him to form an opinion that we were now at the bottom of the season of depression, and that, in future, values would increase. Two years ago he was offered a place in Norfolk, with 1,500 acres of land, for £15,000. It was not convenient for him to purchase just then, but a few months ago he again inquired for it, and found that it had been sold for £20,000. That was one instance, and his friends in the midland counties whom he had seen lately were all imbued with the same belief. When he had experience in the midland counties 18 years ago, the greatest anxiety arose from the falling price of wheat. All seemed to depend upon the wheat crops, and all prognosticated, and truly, as it had turned out, that there would be a continuous fall in wheat which would drive farms out of occupation. Many scientific and industrious farmers who owned their own land then made a good living by the application of their knowledge and industry, but they were driven out of the field by the falling price of wheat, and they had to make the best arrangement they could with neighbouring farmers to take over their land.

Then as to wheat competition. England was enabling other countries to produce wheat at a price at which, but for capital from this country, it could not be grown; railways in other countries, constructed with English capital, brought wheat here which otherwise would never have come.

There was one point which had not been alluded to which had come under his cognisance, and it was this—that we had been lending a very great sum of money, amounting now to between £15,000,000 and £20,000,000, to the United States farmers upon mortgage of their land. The money was borrowed in London at 4 % and $4\frac{1}{2}$ %, and was lent to Texas, Michigan, Missouri, and the neighbouring states at 6, 8, 9 and 10 %.

enormous sums, ready on application by farmers for loans, had induced people to take lands which, but for that, they would not have taken. A great number had migrated from their old farms, and it amounted to this—that while the loans enabled them to cultivate new land, when the time came to pay the interest the agents of the company lending the money insisted on its being paid, and, unfortunately, all there was to pay with was wheat. The maize was wanted for their own support. The agents who came round made contracts for the wheat, rushed it into Chicago, and sold it at a price that did not pay. But if they could not go on growing wheat at the price they were selling it, why did they sell it? Because they had to meet the interest, and to sell it for what the factors would give them. The consequence was that enormous quantities of wheat were sold at Chicago at a price so ridiculously low that nobody would dream of growing it for such a return. Then the fall in freights, coupled with that, had enabled wheat to come to this country at prices that could not be contended with. But it was not likely that the people in those States would go on growing wheat at a loss. That must cure itself; and as the temporary demands for interest on their loans were met they would be more independent, and would be able to refuse to sell their produce at rates that did not pay, and prices would accordingly go up. That applied to barley as well as to the wheat supply; therefore he considered farmers might look with some degree of hope to the time when competition would cease to increase, and that prices would rise; although, no doubt, India would produce wheat at low prices for many years to come.

Then the question arose whether there was not a possibility of diverting the use of land from bare wheat-growing land to other sources of income. His experience in

the north of Ireland convinced him that there was. There the farmer grew small quantities of wheat for the pleasure of having wheaten bread and straw for thatching his houses, but never grew it for profit, falling gradually into the way of substituting other products. Farmers in England were not wanting in education or intelligence, and that education and intelligence, applied to the cultivation of the farms on which they were placed, would, no doubt, be one of the elements which would tend to raise the value of land. He felt convinced that the price of land had touched the lowest point, that it was now rising, and that not only would rents be better paid, but that farmers would have better times.

Mr. ARTHUR GARRARD (Fellow) thought that the question of freight and exchange had not been sufficiently considered, as affecting the price of imported wheat. Since the last Meeting, he had had an opportunity of making some inquiries on this point, and the information he had gathered might be of some interest to the Meeting.

He had been informed that the freight on wheat shipped from Calcutta had varied, within the last few years, from 1s. 6*d.* to 12s. per quarter, making, with the exchange, a difference of more than 20s. per quarter here.

Wheat *had* been sent from India for 1s. per quarter, but that was exceptional, and had probably been carried in a homeward-bound vessel, which must have ballast or some load, however cheaply it was carried. The fluctuations in the cost of freight would astonish anyone not used to the shipping trade—for instance, jute, last month, paid 62s. 6*d.* per ton from Calcutta, while, for the same article, 35s. had, this month, been accepted by the shipowners. Freight from Calcutta were now about 32s. 6*d.* per ton, equal to 7s. per quarter.

The cost of wheat, free on board at Calcutta, was about 25s. per quarter, and this did not vary much. Add to this 7s. for freight, and 1s. 6d. for lighterage and brokerage, and the prime cost of Indian wheat would be about 33s. 6d. per quarter in London. The figures he had given for Calcutta would apply approximately to other Indian ports.

The total quantity of wheat raised in India yearly was about eight millions of tons, not more than 15 per cent. of this being exported. A much larger quantity could be raised by opening fresh lands, but the difficulty of doing this was the want of railway communication. A large yield of wheat did not tend materially to lower the price at Calcutta, in fact, the ryot received less in 1883, when Calcutta wheat was selling here at 43s. to 44s., than lately, when the price was 34s. to 35s.

The conditions which governed the fluctuation of freights from India no doubt affected in a similar way other exporting countries, and, as the tide of commercial prosperity set in, a rise in freights might be expected to follow.

It seemed impossible to get any reliable data with regard to America. In consequence of the rage for speculation, or rather, gambling, in wheat, the prices rose and fell rapidly, and without any apparent legitimate reason; but it was, at least, satisfactory to know that, at the present time, wheat was dearer in Chicago than in London.

Mr. A. D. WELLS, in reply, desired to thank the Members very much for many kind expressions of appreciation. He had never really intended to deprecate criticism—in fact, he had hoped to draw from many, expressions of different opinions which would add interest to his Paper.

His Paper, as had been remarked by several speakers, naturally divided itself into two parts—the first dealing with

the improbability of the present low price of corn continuing, or sinking still lower. He thought he might take it, without going into details, that there was almost a consensus of opinion that we had really now touched bottom. Those who were much better able to form an opinion than himself had all given evidence, he thought without exception, that the very low prices that had prevailed during the last few years were likely to be improved upon.

With regard to the typical balance sheet he had ventured to give, his aim and object really was to try and prevent an increase of that scare which had become so general. He wished to show that there were really no grounds for thinking English farming was at an end. In his own opinion, it was almost entirely a question of rent. Mr. BEADEL, who so kindly moved the vote of thanks to him, made a remark which struck him as exceedingly wanting in that dismal science, political economy: he said that landlords could not afford to take less rent. But who was to be the judge or the arbiter of what the landlord could afford? How could he possibly get more than others would give him? The only alternative, it seemed to him, when the landlord would not take the offers made for land, was that he could farm it himself, and it was for the landlord to say then whether he should do so or whether he should let it at the market value, viz., what it would fetch in the open market.

Perhaps he might dismiss at once the many remarks that had been made by speakers about the absence of horned stock from his calculations. The figures were intended for an entirely arable farm, and on an arable farm there was, as a rule, very little scope for horned stock. It was not intended to be a grazing farm—not a milk-producing farm—and it was not suited for it. If 100 acres of grass were

added to the 400 acres, he admitted there would be ample scope, and, perhaps, a profit would be left after the expenses incident to the pasture; but that was his answer why there was no profit shown on horned stock, and why no milk and no butter were credited.

Horse-breeding had been mentioned by Mr. SHAW of Derby as a very useful source of income to the farmers in his neighbourhood. Perhaps, in exceptional cases, long prices were made which would set off half a year's rent, and it was open to any man to go in for a speciality of that sort, whether it was cattle, or pigs, or horses, but he did not think it would be fair to credit a large sum for the sale of horses. Now he came to pigs, and there he admitted he thought there was a small profit, but it depended entirely on management. He made a statement at second-hand, he believed, from the late Mr. MECHI, that 7 lbs. of corn would produce 1 lb. of pork. It was merely a question of arithmetic as to what the price of the proposed corn was, and what the price of the bacon might be, and there might be a small profit there, but he had not wished to overburden his balance sheet with details. If £20 were added would the pig-fanciers be satisfied, he wondered! He did not think he could afford more.

During the discussion Major CRAIGIE and other speakers had said that he had not put enough for taxes, and went on to say that he had put too much for tithes. He did not put more than a shilling an acre (1s. in the £) for taxes because, when he wrote his Paper, there seemed a prospect that local rates were going to be equalised, and that personal property was to share the burden with real property. This prospect had been realised to a certain extent. Half the probate duty was to go now towards the local rates. He went on the assumption that instead of 2s. 6d. in the £ one shilling was about fair.

Then, as to the tithe, Major CRAIGIE had remarked that it was too much; but tithe upon arable land in his (Mr. WELLS') district had been 10s. an acre, and was now reduced to 8s. The rental of arable land had been £2 an acre, and now, in consequence of the price of corn having fallen, it was about £1 an acre, so he had taken his own neighbourhood as his standpoint. He was not careful to distinguish between rent and tithe—it really made no difference whatever to the tenant. Some land was tithe-free, of course. The amount then paid the landlord was so much the more. On the other hand, some land was very heavily tithed, and the rents had sunk to almost nothing.

Many speakers had criticised his labour bill, but he thought he had stated clearly that the only way he knew to reckon the labour bill was to charge all the items. He had not said “so many men at so much a week come to so much a year,” but had put down the various items connected with the cultivation of an acre of wheat and barley as follows:—

EXPENSES OF LABOUR (NOT HORSE) ON 1 ACRE OF WHEAT OR BARLEY.

	s. d.		£	s. d.
Quit-ch-digging . . .	2 0	200 acres corn . . .	400	0 0
Hand-hoeing . . .	5 0	30 mangolds } . . .	115	0 0
Docking . . .	1 0	16 beans } . . .		
Thistle-cutting . . .	2 0	Carters . . .	180	0 0
Fagging by hand . . .	12 0	Shepherds . . .	75	0 0
Stacking (not carters) . .	3 0	Hoeing . . .	30	10 0
Thatching . . .	1 6	Hay . . .	31	0 0
Threshing 4½ qrs. at 2s. 6d. .	11 3	Sundries . . .	50	0 0
Winnowing at 6d. . .	2 3			
Per acre . . .	40 0		£881	10 0

Beans and mangolds, manual labour, 50s. per acre.

He had not allowed anything for wet days and the men being idle, and as he had not allowed even the expenses of

a foreman, that was the barest amount, he thought, for which the work could be done. He had not allowed anything for machinery for cutting and threshing corn, but he had charged the prices in the labour bill so that there should not be expensive machinery running to waste and depreciating. He knew that there were many advantages in using machinery, but there were also serious disadvantages.

Much had been said about his selling all the straw and not purchasing any artificial manure. Again, he must revert to his own practice. He did not use any artificial manure. He found, in his own case, that it had no effect. He fed very largely with artificial food, and, in the last ten years, had put down the average amount spent on corn for the sheep on 500 acres of arable land, and it amounted to £9,000, or an average of £891 per annum. The gross profit on his sheep came to an average of £1,586, and the *net* profit on the sheep (after the corn was paid for) £695. In that way he manured the ground, and then thought he might fairly sell the straw. He had not put this down on the debtor and creditor sides, having taken it for granted that Members would understand that if the sheep would pay for the artificial food they were to have it, and he saw no reason why they should not.

Then, as to capital required. It had not been mentioned on the present occasion; but so great an authority as Mr. PELL had said that to estimate the capital required at £10 an acre was taking it too high. He had gone into the details again as to the minimum amount which it would take to stock a 400-acre farm, with the following result, which coincided remarkably with his estimate of £10 per acre:—

CAPITAL

REQUIRED TO STOCK A 400-ACRE FARM, £4,000.

	£
Dead stock*	490
400 ewes at 50s.	1,000
12 horses at £35	420
Labour for nearly 1 year	800
Half-year's rent and tithe	280
One year's rates	20
Horse-corn, 1 year	192
Seeds and seed-corn, 1 year	167
Tradesmen, $\frac{3}{4}$ year, say	100
Housekeeping expenses, 1 year	200
Hay taken to 60 tons at £3	180
Cultivations, paid for, 120 acres at £3	160
	£4,009

He was glad to find a consensus of opinion that land let rather better, although Mr. CLARE READ said it was not now sold, but "given away."

He could not follow Mr. TUCKETT in his objections to his rotation of crops. He admitted that his rotation was unusual, but, perhaps, that was rather to its advantage than otherwise, and it had certainly induced discussion.

THE PRESIDENT said that the very long and comprehensive discussion which had just closed recalled to his mind the lines,

"Let observation with extended view
Survey mankind from China to Peru,"

for almost every part of the inhabited earth had been passed

*DEAD STOCK.

6 wagons at £30	180	
6 carts at £12	72	
1 drill	25	
1 water cart	15	
6 ploughs at £5	30	No insurance 1st year.
4 harrows at £3	12	No repairs 1st year.
4 horse hoes at £2 10s.	10	No interest of money 1st year.
12 sets harness at £3	36	No casualties (allowed for).
1 grass mower, &c.	20	
Hurdles and sheep tackle	50	
Sacks and barn tackle	40	
	£490	

under review by one or other of the speakers, in relation to the production of corn and wheat.

A gentleman (Mr. CROSS) who was present at the last Meeting had threatened the British farmer with a new and formidable competition from the Argentine Republic, from Buenos Ayres, and from other unexhausted areas of production through increasing railway facilities. But had it struck those who held this view that these countries would be competing quite as much with the United States of America and other exporting countries as with Great Britain—a fact which would have an important bearing on the effectiveness of the threatened extension of British corn imports.

The lateness of the hour prevented his dealing with the subject before the Meeting at great length, but he should like to say, with reference to Mr. TUCKETT's remarks, that there was another side to the question of bi-metallism; that his own views scarcely corresponded with Mr. TUCKETT's would, perhaps, be apparent from the fact that he had followed the excellent example of his friend Mr. BEADEL in becoming a Member of the Bi-metallic League, and had received that very day an announcement that he had been elected a Member of the London Committee of that body.

He would, he felt sure, have the warm approval of the Meeting when he expressed his sense of obligation to Mr. WELLS for his interesting and useful Paper, and his gratification that it had elicited so admirable a discussion.

The Meeting then adjourned.

QUANTITY-SURVEYORS: THEIR DUTIES, RIGHTS, AND LIABILITIES.

By JOSIAH HUNT (FELLOW).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION, January 28th, 1889.*

CHARLES J. SHOPPEE (VICE-PRESIDENT) IN THE CHAIR.

I HAD prepared for our Institution a Paper on part of this subject dealing chiefly with the rights of the surveyor, and against whom he has such rights; and in that Paper I thought it expedient to give a history of an ordinary bill of quantities, so that our learned Associates might understand the basis on which I endeavoured to build up our "Bill of Rights," but a case recently decided in the Court of Appeal (*Priestley and Gurney v. Stone*) has attracted so much attention that I have deemed it necessary to recast the original Paper, and as in this Paper the consideration of the case of *Priestley v. Stone* will occupy a large portion of the limited space, I must dispense with so much of the original Paper as related to the history of a bill of quantities, and consider that you are all acquainted with the procedure by which a bill of quantities is produced, from the time when the need of it has appeared to the architect or his employer, until the time when the tenders, based upon the bill of quantities, have been delivered.

I do not hide from myself the difficulties of the task which I have undertaken, but I shall endeavour to state my

views as clearly as I can, with the reasons for such views; and I trust that the discussion on this Paper may lead to a more accurate apprehension of the rights and liabilities of the quantity-surveyor than is now generally entertained. In dealing with legal matters I shall probably employ, at times, some inaccurate terminology. For any such blunders I ask pardon in advance.

Before touching upon the more difficult subject of the rights and liabilities of the quantity-surveyor I will say a few words as to his duties, and as to what this surveyor should be. His duties may be concisely summed up. *He should do that which is right.* It is not sufficient that he should wish to do that which is right, he must do it. The will to do right may be present, but how to do that which is right he may not find, the doing that which is wrong instead of that which is right arising from ignorance. Ignorance on the part of a surveyor is no excuse for errors which may result from ignorance. If he does not know how to do his duty he should know, and if he does not know he should not attempt to do the work of a surveyor. What should he know to enable him to do his duties satisfactorily? The more knowledge he has, the more intelligent he is, the more likely he will be to do his duties well. No knowledge will come amiss to him at some time, to help him in his duties. A knowledge of geology, mineralogy, chemistry, metallurgy, physics, mechanics, languages, all will be useful. A reasonable knowledge of mathematics, "the science which treats of "all kinds of quantity which can be numbered or measured," is indispensable; and he should know how to apply practically his abstract knowledge. Of architecture and the laws of architectural design he cannot know too much. It is essential that he should have a sound practical knowledge of building and building construction. He should be well acquainted with building materials, and their specialties in

the district in which he is working. He should be a fair draughtsman, so as to be able to reduce into lines upon paper the objects he wishes to set forth; in other words, he should be able to make proper working drawings; and specially he should have acquired the art of "reading" drawings accurately, so as to see clearly what the architect intended by the lines upon the drawing, and by applying this knowledge be able to detect discrepancies or differences in different drawings of the same building, such as any want of agreement in plans, sections, and elevations; and by this also he should be able to discover anything imperfect in the design which would prevent its being effectually carried out, so that he may not measure walls on an upper story without those walls having something to support them; and so that he may see that the staircases are so designed that they can be constructed with sufficient headway and "get up" in the space allowed for them on the plan. He must have a clear knowledge, at least, of the construction of his own language, so that in reading a specification he may see not only that it is in accordance with the drawings, but that it is not contradictory in itself; and so that in writing his bills of quantities he may not only express himself clearly and unambiguously, but that his words may convey the whole of the information requisite to enable the builders who shall use his bills to price them with readiness and facility.

A quantity-surveyor should be honest and impartial, taking or measuring that which is required by the drawings and specification, neither more nor less. He should be patient and painstaking; accurate in dimensions and in expression; where he has written instructions expressing himself as nearly as practicable in the words of his instructions. He should be systematic, so that he may clear his way before him as he goes, and may be able at any after-time, on seeing the drawings, by referring to his dimensions to find

the items with little trouble as to which inquiry is then being made. He should be clear in his knowledge of all that is required for the construction of the work on which he is occupied, so that he should be able to take not only the works which are shown or described, but all such things as are necessarily implied and incidental thereto.

The quantity-surveyor is not serving two masters. He has but one master, "the law of right." He should not suppose his work is done when he has taken off the dimensions. He probably has the abstracts made, and the bills written by his assistants, but no bill of quantities should be issued without its being carefully looked through, after it is written, by the surveyor who took the dimensions. I believe that more errors arise from want of proper care in this respect, than from almost any other cause.

But leaving the question of the duties and qualifications of the surveyor, as to which we shall probably be much in concord, let us consider what are the rights of a quantity-surveyor, and against whom he has such rights.

Bills of quantities are prepared under such varying circumstances that it is impossible within the limits allowed for this Paper to consider more than such as are of ordinary occurrence. The rights in each case will depend upon the special circumstances of the case, and the special circumstances must always be examined before attempting to generalise upon them. In this Paper the considerations will be mainly limited to those cases in which there are at least three, and at times four, parties interested; these are—

1. The employer or building-owner. He who is the motive of the whole undertaking, for whom all the other parties work, and who becomes ultimately, directly or indirectly, the paymaster of the whole.

2. The architect; the agent of the building-owner for the purpose of preparing the drawings and specifications, and

for such other purposes as are clearly incidental to his employment as architect.

3. The quantity-surveyor. His relations to the building-owner we will consider presently, but for the purpose of this Paper he will be considered as preparing the bills of quantities by the direction of the architect of a building-owner, and as issuing the bills, when prepared, to the builders who are to tender for the work;—and if, after the preparation of the bills of quantities and the reception of tenders based upon such bills, the building-owner is satisfied with, and accepts one of the tenders, there will be a fourth party, viz. :

4. The builder, who will enter into a contract with the building-owner, and will carry out the works in accordance with the drawings and specification prepared by the architect, which works should be accurately represented by the bills of quantities prepared by the surveyor.

Before considering the different classes into which bills of quantities—as we shall consider them—may be divided it may be expedient to state the meaning which I have attached to certain words, and the general maxims, or postulates, which will govern all the remarks I shall offer.

By “contract” I mean an undertaking to do a certain work, or to supply certain things, for a consideration. “Contract” and “agreement” are interchangeable words—a contract may be either “express” or “implied.”

By “privity of contract” I mean a peculiar mutual relation which subsists between individuals as to some particular transaction.

By “negligence” I mean such a failing to use ordinary care and skill in the preparation of bills of quantities that, by such failing, loss or damage results to another party to the contract. “Every person who adopts a learned profession undertakes to bring to the exercise of it proper

“ qualifications and a reasonable degree of care and skill,
 “ and a party injured through a breach of this undertaking
 “ may maintain an action for the breach” (JENKINS AND
 RAYMOND’S “ Legal Handbook for Architects,” page 3).

The general maxims which govern all the arguments in
 this Paper are—

1. “ That in all cases which we shall consider the
 “ quantities are prepared for the benefit of the building-
 “ owner.” Quantities are prepared to enable the building-
 owner to obtain estimates for the building which he pro-
 poses to erect, which estimates he could not obtain from
 competent builders without such quantities, so that he may
 buy in the cheapest market, or obtain the work he requires
 for the least money. The bills of quantities are used by the
 builders to enable them to make their estimates or tenders
 to do the required work, but all the builders so using the
 quantities are occupying themselves, and spending their
 time and their money for the benefit of the building-owner.
 I know that this “ maxim ” does not agree with an opinion
 too commonly entertained. Thus Lord COLERIDGE in his
 summing-up in the recent case of *Schofield v. Barnardo*
 (“ Professional Notes,” vol. ii., p. 220) told the jury “ as a rule
 “ he ventured to state with confidence that it was the part of
 “ the builder, *for whose convenience it was done*, to pay the
 “ quantity-surveyor.” With all deference to the opinion of
 the learned lord, he misunderstood the *raison d’être* of a bill of
 quantities, and his ruling, being based on a misconception, falls.

But it is little to be wondered at that a learned lord
 should misunderstand the origin of bills of quantities when
 the editor of our oldest professional paper puts forward
 the same view in stronger language (The *Builder*
 August 18th, 1888, p. 115, col. 1). The editor writes :—
 “ We have always maintained, in spite of the prominence
 “ into which of late years this bogey of quantities has been

“brought, that the quantities are in reality the business of the contractor, *and of him alone*. The building-owner wants a building according to his ideas and the plans which he has approved, and wishes to know the cost beforehand, but how many cubic feet of this or that material go to it is nothing to him. The architect wants his designs properly carried out, the exact quantity of material it includes is nothing to him either, he makes his designs independent of any such consideration. To the contractor alone it is of consequence to know the precise amount of materials required, because he has to calculate the cost so as to leave himself a profit.” The answer to all this is that the quantities are only means to an end, that end being that the building-owner may obtain the work he requires for the least money, and for this end, and for this end only, are the bills of quantities prepared.

A second general “maxim” is—2. That before a surveyor can establish a right to obtain payment for quantities there must have been a “privity of contract” between him and some other person, and that his right to recover payment is restricted altogether to the person with whom he has such privity of contract; or in other words, whatever right a surveyor has, he has only against the person who employed him, and against no other person.

A third general “maxim” is—3. That “right” and “liability” are correlative and reciprocal. If the surveyor has a right against the building-owner he is liable to the building-owner if he is guilty of negligence, and conversely, if the building-owner can recover against the surveyor for negligence he is liable to the surveyor for payment for the quantities.

Having thus stated the definitions and general maxims which govern the remarks in this Paper it will be expedient to divide the varying circumstances under which bills of

quantities are found into classes, so as to avoid the confusion which arises from not distinguishing between things which differ.

In CLASS I. we will consider the cases "where the quantities are prepared by direction of an architect, with the knowledge of the building-owner, and the building does not go on."

Divested of its special circumstances the recent case of *Schofield v. Burnardo* belongs to this class.

The surveyor has done all the work which he was engaged to do, but the building is not carried out. Who is liable to pay the surveyor?

Surely not the builders who used the quantities, for they have had their trouble and expense for nothing, as no one of their number has been selected to carry out the work, and why should they add to their expense by paying a surveyor, of whom they possibly knew nothing until they received the bills of quantities from him? Can it be said that there is any privity of contract between the builders and the surveyor so that they become liable to pay him because they have made estimates based upon the bills of quantities sent to them by the surveyor, by direction of the architect with the knowledge of the employer?

Is the architect liable to the surveyor? He gave him directions to prepare the quantities, and doubtless there are special cases where the architect may make himself personally liable to pay the surveyor, but these cases are exceptional. An architect should disclose to the surveyor the name of his principal, either by putting his name upon the drawings, or by direct statement. If the architect fails to do this, and puts himself forward as principal, and not merely as agent, the architect may render himself liable to pay the surveyor (*Burnell v. Ellis*, *Times*, 25th June, 1866; *Gordon v. Blackburne*, the *Builder*, 1st February,

1879). "And an architect must not mislead a surveyor as "to having received authority from his employer when he "has not so received it." If an architect does some act professing to contract for the employer, he impliedly warrants to the other contracting party that he, in fact, possesses the authority he assumes to exercise, and he becomes liable to an action for breach of such warranty (EMDEN'S "Law of Building Contracts," p. 116).

But in ordinary cases the architect, having arranged with his employer as to the engagement of a surveyor, becomes the agent of the employer for the purpose of carrying out all things incidental to his occupation as architect, and one of these things is, as agent, to notify to the surveyor that he is requested to prepare the quantities for the building proposed to be erected. The surveyor rarely comes in contact with the employer; all his instructions come through the architect, and the surveyor looks upon the architect as agent for the employer, and not as in any way liable to pay him in case the employer does not do so. The architect, acting only as architect, is not liable.

Is the employer liable to pay the surveyor? Why should he not be? It might be said he certainly is, if it were not for the frequent recurrence of difficulties as to the payment of surveyors in cases like this. It seems to me that if the employer has been informed by the architect that a surveyor will be employed to prepare the quantities that the architect is specially the agent of the employer for the employment of a surveyor, and that the employer becomes liable to the surveyor on a contract made by his agent for the payment of the reasonable and proper charges of the surveyor, should there not have been a specific agreement as to the charges which the surveyor was to make. It rested with the employer to decide whether or not he should have the building he has decided not to build. Why should he

not pay the surveyor whose work has been done as completely as if the building had been carried out? But, in cases where the employer is a corporation, I do not think that any ordinary notice to the corporation as to the employment of a surveyor will entitle such surveyor to recover payment for his work. His only security will be a contract under seal of the Corporation. So long as the judgment in the case of *Hunt v. Wimbledon Local Board* (L.R. 4 C.P.D. App. 48; 48 L.T. C.P.D. App. 207 [1878]) is unreversed the surveyor (I think) cannot have a better right than the architect, and the architect has none except he has a contract under seal.

And, again, where an employer has restricted the power of an architect so that the architect is precluded from pledging the liability of his employer, even if this restriction is not made known to the surveyor, the surveyor cannot recover from the employer. So in *Richardson v. Waghorn and Beales* (*Times*, 29th June, 1867) the surveyor failed to recover from the employers because the architect had been instructed to obtain tenders, *provided he did not pledge the liability of the committee in so doing*. And yet further, if the employer has employed an architect, but has limited his employment to the designing a building which can be erected for a certain specified sum, and when the tenders are received and it is found that the cost will exceed the stipulated sum and the work is not carried on, it would appear from the case of *Schofield v. Barnardo* that the surveyor cannot recover payment for the quantities from the employer. In that case the defence was that there had been such a limitation of the architect as to cost, and the plaintiff recovered only because the defence was not sufficiently substantiated; but the opinion of the learned Judge evidently was that if the defence had been substantiated the plaintiff would not have been entitled to recover.

Therefore, if the surveyor wishes to protect himself against future trouble, and probable loss, he should at the outset have a clear understanding with the architect as to the position of the case, and as to the restrictions, if any, which the employer has imposed.

Let us now consider CLASS II. "where the quantities are prepared without the knowledge of the employer and the building does not go on." Class II. differs from Class I. only in the want of knowledge by the employer before the quantities are prepared. In such a case who is liable to the surveyor? In treating Class I., I have supposed that the architect is not liable, and that the builders tendering are not liable, and the liability of these persons is not altered in this case. Is the employer liable to pay the surveyor? In treating of the liability under Class I., I have considered that the employer is liable to pay the surveyor on a contract. Where is the contract in this case? The architect has directed the surveyor to prepare the bills of quantities without the previous knowledge of the employer. Because a man has been employed as architect to prepare drawings and specifications, and to obtain tenders for a proposed building, has he, as such architect, an implied authority to bind the employer to pay for quantities, of which he may know nothing, and does not know that he is to be made liable to pay for them whether or not the proposed building be erected? An employer knows that he will have to pay his architect, and that if the work goes on he will have to pay the selected builder such sums as shall be agreed upon for works done to the building; but is he to be supposed necessarily to have legal knowledge that he must pay a surveyor, of whom he has never heard, for quantities of the expediency of which he knew nothing? Or is there any such well-established custom for the employer to pay the surveyor for the quantities, where a proposed building is

not erected, as to make the employer liable to pay? It is desirable here to examine the well-worn case of *Moon v. Guardians of Witney Union* (3 Bing. N.C. 814, 1837). The leading features of the case are well known, and are set forth in "Professional Notes" (vol. ii., page 220), and it is only necessary to add to what is there stated that MOON, the plaintiff, was informed, and all the builders tendering were informed, that the successful builder would have to pay MOON; that the Guardians decided after the quantities were prepared not to carry out the architect's design; that the fact that the quantities were to be taken out by a surveyor had been communicated to the solicitors for the Guardians; and that when the architect sent in the bill of the surveyor with his own the Guardians did not at once repudiate their liability.

The defence was that there was no contract subsisting between the plaintiffs and the defendants.

In frequent discussions with counsel I have been cautioned not to rely too much upon the decision in MOON's case, the opinion of counsel being, that so long as the case remained undisturbed it was a precedent, but that if such a case were now carried to the Court of Appeal, or to the House of Lords, the decision in MOON's case would probably not be upheld. But in JENKINS and RAYMOND'S "Legal Handbook for Architects" (page 31) the general deduction, drawn mainly from MOON's case, is thus stated:—"When an architect is employed to prepare plans and specifications for a new building he is impliedly authorised to contract, as agent for his employer, with a surveyor to take out the quantities, such being the usage. On the contract thus made by the architect the employer is liable."

But does the decision in MOON's case carry us so far? As to the usage or custom there can be no doubt that now it is the usage for architects to have the quantities taken out

by surveyors, and as TINDAL, C.J., in his judgment does not dispute that the custom is a reasonable one, it may be considered to have the support of his most valuable opinion ; but were there not more things than the usage which influenced the mind of the Court in MOON'S case ?

TINDAL, C.J., says "that usage having been found by " the jury, there were many things which go to support their " verdict." Mr. HUDSON says, in " Professional Notes " :— " One of these things was, that the building proprietors " knew that quantities would be taken out by somebody."

As a fact I do not think it is anywhere stated that the Guardians knew this, but their solicitor did, and this probably had some weight with the Court.

In ROSCOE'S " Digest of Building Cases " (page 2), after setting forth very broadly the authority of architects as " general agents " for the employer, he says:—"Has an " architect, who is engaged to prepare plans and to super- " intend the erection of a building, authority to order a " quantity-surveyor to prepare bills of quantities, and to " bind his employer to remunerate the surveyor? This, " apart from any specially expressed or implied agreement " between an architect and his employer, is a point which " cannot at present be decisively answered in the absence of " any authoritative decision on the point." I do not think that any prudent person would feel justified in giving a more decided opinion than Mr. ROSCOE has done, notwithstanding the decision in *Moon v. Guardians of Witney Union*. If a surveyor can establish authority, express or implied, from the employer he can recover his reasonable charges from the employer ; but suppose a case tried in court, and the employer gave evidence that he knew nothing, directly or indirectly, as to the employment of a surveyor to prepare the quantities, and that if he had known that he was to incur a liability to pay the surveyor for preparing the quan-

tities, whether or not the building was erected, he would not have incurred such a liability, I think in all probability the surveyor would fail to recover.

There are some cases, however, which appear to strengthen the general opinion deduced from *Moon's* case, viz., "that an architect having been instructed to obtain tenders is by that instruction empowered to have the quantities prepared, and, so to speak, to pledge the employer to pay for them, even if he had not authorised their preparation." In *Gwyther v. Gaze* (*Times*, 8th February, 1875), an action by a surveyor against a building-owner, Mr. Justice QUAIN left it to the jury to say whether the architect's authority was limited in the way stated by the defendant; and told them that if it was not limited the defendant was liable to pay the plaintiff a reasonable remuneration for taking out the quantities.

And in *Waghorn v. Wimbledon Local Board* (*Times*, 4th June, 1877), an action by a surveyor against a local board, the defendants pleaded that they never authorised their architect to employ plaintiff, but the learned Judge ruled that as they had instructed him to procure tenders, and as tenders could not have been made without quantities, they had impliedly authorised him to get the quantities taken out. I believe that this case ultimately went to the Court of Appeal (I have not found any report of the appeal), and that judgment was there given for the Local Board because there was no contract under seal; but this does not impugn the ruling of the Court below that the architect was impliedly authorised to employ a surveyor.

Taylor v. Hall (4 Ir.L.R. C.L. 467) is an important case, but it is too much mixed up with special circumstances to be usefully noticed here.

There is a very useful collection of these cases in a book by Mr. LEANING on "Quantity-Surveying."

But it is unquestionable that the tendency of the Courts of Judicature is strongly against saddling a building-owner with liabilities of which he has no knowledge. In a recent case, *Young v. Blake and another* ("Professional Notes," vol. 2, page 351), Mr. Justice DENMAN in his judgment said, "*Scrivener v. Pask* seems to me only to amount to this—" that where there is nothing more than the ordinary employment of a quantity-surveyor, the quantity-surveyor being paid out of the first receipts by the builder of a building-owner, who must have quantities taken out in one sense, that is to say, who will not get tenders unless the quantities are taken out—where there is that simple case there is nothing in that case merely from the fact that the building-owner orders things which involve the probability of quantities being taken out, to fix him with a liability to pay for the quantities so taken out, which are taken out by a quantity-surveyor ordered by the architect, or by the architect himself. It appears to me that that case (*Scrivener v. Pask*) at least goes as far as this, that unless there is something binding the owner, some understanding between the parties to be gathered from correspondence or words, making himself liable for the taking out of the quantities, that he is not so liable."

For myself I am in great doubt as to cases under Class II., where the quantities are prepared without the knowledge of the employer, whether the surveyor has a right against anyone. If against anyone it is against the employer, or, as we otherwise term him, the building-owner.

Let us next proceed to examine another class of cases under CLASS III. "Where the quantities are prepared with the knowledge of the employer, and the building is carried out." It differs from Class I. by the building going on instead of being abandoned. In this class there is one selected builder, and we will suppose a contract entered into between

the employer and the builder to carry out the works for a stipulated sum. Who is liable to pay the surveyor?

The details used to illustrate Class I. apply here, and, I think, the conclusions arrived at in Class I. apply here also, and that the employer is liable to pay the surveyor. This is not the opinion usually held. Thus in a Decalogue given in "Professional Notes" (vol. 2, page 229), Law 5 says:—"That on the acceptance of a *bonâ fide* tender, the liability " to the surveyor shifts from the client to the builder; the " surveyor accepts the builder as responsible to him, and his " right of claim against the client ceases." And JENKINS and RAYMOND, in their "Legal Handbook" (page 31), say (in continuation of a quotation given in noticing Class II.): " but (the contract being conditional) if a tender be made " and accepted, and the works proceeded with, the liability " will shift, and the contract will then be taken to subsist " between the builder and the surveyor. In this case the " surveyor is not the agent of the employer, or building-owner."

As I do not recognise this Decalogue as LAW to me, I will restrict my remarks to Messrs. JENKINS and RAYMOND. With all deference to the opinions of these learned gentlemen, whom I mention with respect, I think that they are in error, and I will briefly state my reasons for so thinking.

We know the situation under Class I., the circumstances there detailed are not varied except as to the carrying out the building,—they are added to. The tender of one builder is accepted, a contract is made between him and the employer to carry out the works for an agreed sum, and when the works are sufficiently advanced the builder receives from the architect a certificate that he is entitled to receive the first instalment under his contract, and the employer pays the builder the amount so certified. If things go on as they should do the architect tells the surveyor that the builder has received an instalment under his contract;

the surveyor applies to the builder for payment of his charges for taking out the quantities, the amount of which should form a portion of the total amount of the contract sum, the builder pays the surveyor, and the story is ended happily.

But in what sense was the contract between the employer and the surveyor "conditional," and where is the "shifting of liability"? When was any contract entered into between the surveyor and the builder so as to make the builder liable to pay the surveyor? When did the surveyor cease to be the agent of the employer?

As I cannot answer these questions, I will give my version of what does take place. It is necessary to refer to a notice which the surveyor usually gives to the builders tendering as to the payment for the quantities which he inserts in the bill of quantities under the place where the total amount of all the items of works will be found. He writes there:—"Include for surveyor's charges () *per cent.* upon the above amount to be paid by the builder on "receipt of the first instalment under his contract"; that is to say, the surveyor, as agent for the employer, tells all the builders tendering the mode by which his charges are to be paid in the event of the tender of any one of them being accepted. The employer wishes to know the extent of his liability for the whole work and not to make separate payments to builder and surveyor and probably other people, and he has the amounts which will become due to the whole included in one sum. That is all, as far as I can see. The liability of the employer does not shift or pass over from the employer to the builder, the surveyor does not cease to be the agent of the employer, there is no contract between the surveyor and the builder whereby the builder becomes liable to pay the surveyor.

What does happen is this:—When the architect gives

the builder his certificate for his first instalment, he says, or should say to him, "Out of this instalment you will have "to pay the surveyor his charges for the quantities." When the builder receives the money for this instalment he does not (so far as I can see) enter into any contract with the surveyor to pay him, he becomes, so to speak, a bailee or trustee for the purpose of handing over to the surveyor the money which he has received from the employer for that purpose. If he does so all question of liability is at an end, but if he does not do so, what then?

As I do not see that at any time there is a contract, express or implied, between the surveyor and the builder, and as from the notice as to payment given to the builders tendering any such contract could not arise (so far as I can see) until the builder had received from the employer a payment under his contract, I think that if the builder after receiving such payment is liable to pay the surveyor it must be for money had and received on his behalf, and not under any contract. But the surveyor has not waived his right to payment by the employer because the employer thinks fit to pay him through the builder instead of paying him direct. There may be cases in which the surveyor might strongly object to waive the right he had against the employer. Suppose the employer to be a wealthy man, and a builder is chosen by the employer whom the surveyor believes to be insolvent—is the surveyor, against his will, to forfeit his claim against a wealthy employer to substitute a claim against an insolvent builder?

But to revert to the question. What then? The builder has received an instalment, and does not pay the surveyor. I think that the employer is still liable to pay the surveyor, and he can obtain redress from the builder by arrangement with the architect to retain sufficient value in hand, so that at the winding-up the accounts for the works

the architect can deduct from the balance which would otherwise be due to the builder the amount which the builder ought to have paid the surveyor for the quantities and which from his default the employer has had to pay. Then everyone would come by his own, and no party would be damnified.

If the builder does a portion of the works included in the contract, and receives a payment on account, and without paying the surveyor becomes bankrupt, and the remaining work is given to another builder to complete, the surveyor, I think, has no claim against the estate of the bankrupt builder, his claim remains against the employer, and in the settlement of the accounts for the work done before bankruptcy the bankrupt's estate will only be credited with the value of the work actually done, without any notice being taken of the sum included in the contract sum for the bills of quantities, and it will be debited with all the money which has been paid on account of the contract.

I state these views "under correction" if I am in error. Unless a surveyor has a right against a builder, and could recover his claim for the quantities against the builder, he cannot have a right to prove against the estate of the bankrupt. My argument has been that, in these cases, the surveyor has his claim against the employer, and not against the builder. He cannot well have his right against two parties at the same time for the same work. Possibly a trustee, or assignee of a bankrupt estate, might be well advised to allow a surveyor to prove against the estate for his claim for quantities, because the surveyor could only receive whatever dividend was paid by the estate, while the estate would be entitled, under the circumstances, to receive the full amount for the quantities from the building-owner. But as to "right," the builder must be liable to the surveyor before his estate can be liable.

I am quite prepared to hear the views which I have propounded strongly controverted. It will be strange if they are not. I have cited some authorities against my views, and I could cite many more, for all the text-books which I have seen concur with the adverse opinions. The editors of the *Builder* (August 4th, 1888) and of the *Building News* (January 27th, 1888) teach the same doctrine that a contract shifts—slides—passes over—jumps over as I have variously heard it called, from the employer to the builder. I regret that such an opinion should be held, for I believe that a very large portion of the difficulties which beset us when we endeavour to make the Judges understand our cases arises from this attempted introduction of a “shifting” contract. The Judges do not understand such a thing, and I do not think that you will persuade them to do so. Those who differ from me may bring to bear all the collected opinions of our teachers, all the force resulting from a general entertainment of a belief, but until they can bring a definite authority from reported judicial decisions to establish their view, or until they can demonstrate that the propositions I have put forward are contrary to right reason, or are illogical, I must press them upon the consideration of all who desire to think accurately, and as I believe clear the way for a proper comprehension of our true position by all who have to administer the law.

It is very easy to talk of a contract “shifting” or “passing over,” automatically from one person to another, but I would ask those who hold this opinion, Have you fully considered the whole question? Put a case—A building-owner is liable to a surveyor; a surveyor is liable to a building-owner. But the building-owner and a builder sign a contract for the due execution of a building. By this act of signing a contract the position is changed; the building-owner ceases to be liable to the surveyor; the surveyor

ceases to be liable to the building-owner. Is this so? But the surveyor has been guilty of negligence whereby the building-owner suffers heavy loss. Has the surveyor ceased to be liable to the building-owner? You say that the contract has shifted from the building-owner, of course there is then no longer a contract between the building-owner and the surveyor. What remedy, then, has the building-owner for the loss he has sustained by the negligence of the surveyor? Is it against the builder who gets the benefit of the surveyor's negligence? I trow not; but I leave the answer to those who hold the "passing-over" opinion.

Put another case. A contract has been signed as before, and the contract becomes between the surveyor and the builder. The surveyor then (not before) becomes liable to the builder for negligence—say, short quantities—and the builder becomes liable to pay the surveyor for the quantities. Is that so? Now, suppose the builder has spent a lot of money in proceeding with the building, and when he wants to obtain a payment the building-owner fails, and does not pay the builder anything. Will the builder pay the surveyor for the quantities? *Will he?* The builder has taken away from the surveyor whatever right he had against the building-owner in order to establish a right against the surveyor if there should be short quantities. Having established this right against the surveyor will you take away from the surveyor his right against the builder?

We hear a great deal about the builder paying the surveyor. "The builder will pay the surveyor when he has received the money from the building-owner to do so." That is not a payment under contract at all; it is a handing-over money received for a specific purpose. Do not be misled by a mistake as to the meaning of the word "payment." You hear it said "the surveyor looks to the builder for payment for his quantities." Does he so look to the builder as

having a right to recover against him under contract? If so, there must be a corresponding liability by the surveyor to the builder. Or does the surveyor look to the builder for payment because the builder has been made a vehicle of communication between the building-owner and the surveyor, to receive the money with one hand and to hand it over with the other. If so, it is the building-owner who "pays," not the builder. The builder is only an intermediary used for the convenience of the building-owner.

The fundamental mistake in the "passing-over" theory seems to me to be the attempted introduction of a *tertium quid* (a third something) into a contract subsisting between two parties. The law understands the relationship of the two parties, the rights and the liabilities of the one and of the other. Attempt to introduce a third element into the already-existing contract, and the law fails to understand the relative position—the relative rights and liabilities of any of the parties. Begin at the beginning if you will, and make a contract between three parties—building-owner, builder, and quantity-surveyor—and by such contract make the several rights of the parties clearly understood: you may then feel that you are treading on safe ground, even if the adoption of such a course does alter the whole of the arrangements now customary; but do not attempt to introduce into an already-existing contract between two parties a third party, the introduction of which unsettles the relationship between the two original parties, and which settles nothing in its place.

Having dwelt at such great length on the cases under Class III., and the collateral considerations which arose out of those cases, let us very briefly glance at the cases under the last general case I propose to discuss, viz. :—

CLASS IV. "Where the quantities are prepared without the knowledge of the employer, and the building is carried

“out.” It differs from Class II. by the building going on instead of being abandoned, and it differs from Class III. by the quantities being taken out without the knowledge of the employer. Who is liable to pay the surveyor? I need not repeat the details already given. In this class I think that if anyone is legally liable to pay the surveyor, it is the employer. If he is liable under Class II. he is liable here. If he is not liable under Class II. he is not liable here. The relations between the surveyor and the builder are the same as under Class III., so that failing to obtain payment from the employer I do not see how the surveyor can recover against the builder under any contract, unless it be a contract specifically made between the surveyor and the builder, and such a contract belongs to a class of cases essentially differing from those we have been considering. If he seeks to recover against the builder for money had and received, he must be in a position to prove that the builder has received the money specifically for his use, and I do not see how he can do that.

Having thus considered four different classes of circumstances under which bills of quantities are found it may be expedient to say a few words on some points not already touched upon.

In some cases, indeed the most important cases so far as cost is concerned, it is not unusual for two surveyors to be employed instead of only one surveyor as in the cases we have hitherto considered. Where two surveyors are employed it is usual for one to be nominated by the architect, on behalf of the building-owner, the other nominated by the builders invited to tender, or by the majority of them, the majority binding the minority.

This employment of two surveyors is but the application of two minds to work out the same problem, two minds to work in concord for the attainment of the same end, viz.,

an accurate representation in the bill of quantities of the work to be done in carrying out the proposed building. The surveyor nominated for the employer should no more neglect to take all the work required for the efficient construction of the building than the surveyor nominated by the builders should twice, or times, a dimension that should be left a unit. They are to do "right" jointly, precisely as they would have to do if they were engaged severally—they are to be of mutual assistance in doing "right."

But as to the legal rights of these joint surveyors I confess that I have never been able to fully satisfy myself. I have never heard of a case in which their rights were tested in a Court of law, although, unfortunately, I do know of a case in which the surveyors were not paid for their services; in which case—by the way—if the "passing-over" theory of a contract be correct, the surveyors ought to have been paid by the builder, because not only was a contract signed, but the builder did a large amount of work before the employer became insolvent, and builder, architect, surveyors, and other people went without their money.

But the question of the legal rights of joint-surveyors is too complicated for me to attempt to discuss in this Paper. I have not grasped it. I could probably better play "Devil's Advocate" to any propositions that were propounded than I could state any proposition as to these rights which would be wholly satisfactory. I must be allowed on this subject to keep "an open mind."

As to the rights of hybrid-surveyors, architects who prepare their own quantities, I do not propose to say one word. I shall have to refer to these hybrids in treating on the question of "liabilities," and there only because I find them so mixed up with "hard" cases to builders—cases which seem to make the law a shame, and justice a scandal.

There are many cases in which the builder becomes liable

to pay the surveyor for quantities, but these are on contract made between the parties before the bills of quantities were supplied to the builder. In such cases the surveyor has no claim against the building-owner, who is not then an employer of the surveyor. On such cases I need not dwell.

A few words as to "making the bills of quantities a part of the contract between the building-owner and the builder."

This has been put forward by its advocates as a panacea for all our ills, the means by which any conflicting interests of employer, builder, and surveyor are to be reconciled, so that all may live happily together ever afterwards. There is so much to be said in favour of this proposal, it seems so "fair and square all round," that I am somewhat reluctant even to "hint a doubt" as to its effectual working. So many are prepared to sing its praises that I may leave them unsaid. It has the merit of appearing to be "fair" to everybody, and that is an immense recommendation.

But first a word of caution to the builder. If you have the quantities made part of the contract, do not make the architect arbitrator under the contract. If you do you will probably nullify all the fairness you expected to attain. We shall see why when we come to examine the question of liability.

But there are, I think, several objections to this plan, and I will briefly state some of them.

1. It introduces an element of uncertainty into the contract, which is certainly undesirable. This objection would come most forcibly from the building-owner. He may not be spending his own money. He may be acting as a trustee or *quasi*-trustee, and have only a limited sum of money at his disposal, and there may be no fund from which an excess may be forthcoming at the end of the work. But even an employer spending his own money should have some kind of certainty as to what his outlay is to be. He may be willing

to spend £4,000 on a building, but if when the building is finished he is called upon to pay £5,000 for the same building which he was told would cost £4,000, and on the faith of what he was at first told entered into a contract for the building, he has great reason to be dissatisfied with everybody he has employed. I do not exaggerate the possible percentage of difference as practical results have too frequently shown.

2. As a surveyor I distrust the plan from its tendency to lessen the necessity of care and accuracy in the preparation of bills of quantities. With proper drawings and specifications a bill of quantities can be, and should be, a practically accurate representation of the work to be done in a building, and if this can be obtained I do not see why it should not be done once and for all, and not have something done at first which pretends to produce a bill of quantities, and then possibly have to have the whole of the works measured *in situ* after their completion. If bills of quantities should be made part of the contract, it certainly must tend to lower the status of the quantity-surveyor, and our object, at least, should be to raise that status and not to lower it. I think we should soon drift into the system in vogue in Scotland, and have practically no bills of quantities, none worthy the name, and have all the works measured on their completion. For my part I do not believe that such a change of system would, ordinarily, benefit anyone, least of all, the truly competent surveyor.

3. I fear that the plan would encourage contention. If the bills of quantities can be impugned, of course they are open to attack on both sides. Suppose a dispute to have arisen, the building is to be measured. Instead of a surveyor calmly considering in the preparation of a bill of quantities how to do right, you will probably have two people, not necessarily surveyors, wrangling over every

dimension ; each trying to " best " the other in every possible way. By such a process will you get a satisfactory result ?

4. Thus I can see as the outcome of this plan " uncertainty," " lowering of standard in surveyors," " increase of contention," and certainly new difficulties about the payment of contingent expenses. And yet it is most desirable that the building-owner should pay the builder for all the work he has done for the benefit, and by the order of the building-owner or his recognised agent, and that he should not pay the builder for work which he has not done, but which he may be supposed to have done ; and if this desirable end can be obtained to the satisfaction of owner and builder by making the quantities a part of the contract I shall not object to it, even if the result should be the extinction of quantity-surveyors as a profession.

LIABILITIES.

In treating of the rights of the surveyor mention has frequently been made of the inseparable concomitant of rights, viz., " liabilities." A right imposes a duty, hence a liability if there is a failure to perform that duty ; this failure we have called " negligence." The surveyor is liable for breach of duty to the person against whom he has a right under a contract or agreement.

Before a surveyor can obtain a right against his employer he must not only have done work, but he must have done that work properly. If the work is improperly done the surveyor has not established any right. " When a person " undertakes and is employed to perform a work of skill and " labour and fails therein so that his employer derives no " benefit from the work, the former is not entitled to recover " payment, as the employer buys both his labour and his " judgment, and he ought not to undertake the work if he " does not know whether he can succeed or not." (EMDEN,

“Law of Building Contracts,” p. 111.) If acting as a surveyor he has done his work negligently, and by such negligence the employer sustains damage, the surveyor is liable to the employer for the loss which he has sustained by such negligence. The liability for such negligence only extends to the person to whom the surveyor owes a duty, against which person the surveyor will have a claim if he has done his duty properly.

We have considered the persons against whom the surveyor has rights in the various classes into which I have divided the subject. If we have determined the rights of a surveyor against any person in any of these classes we have at the same time determined the right of that person against the surveyor for negligence. Thus in Classes I. and III. I have supposed that the employer, and only the employer, is liable to the surveyor. If so, in those classes, the surveyor is liable to the employer, and only to the employer, not to the architect, builder, or any other person. In Classes II. and IV. I have left the liability to the surveyor undetermined. If anyone is liable to him I have supposed it to be the employer. If the employer is liable to the surveyor, then, as before, the surveyor is liable to the employer; if no one is liable to the surveyor no one has a claim against him for any breach of duty, because he owes no duty.

Hence in all these four cases, so far as I can see, the surveyor does not in any way become liable to the builder for any blunders which he may have made in taking out the quantities, because he owes no duty to the builder; the builder is not liable to him under any contract, therefore he is not liable to the builder. In other cases, as I have said, where the surveyor may make a bargain, a contract, an agreement, with the builder, he may certainly become liable to the builder for negligence, as the builder becomes liable to him for payment for the quantities.

It is not unfrequently said that the surveyor guarantees, or warrants, the accuracy of his quantities by having his lithographed signature attached to the summary of the bills, or to each of the bills. If the attachment of such signature is held to be the outward and visible sign of a warranty, or guarantee, so far as I can see, such warranty, or guarantee, extends only to the employer, in which case it is surplusage, for the warranty exists without it; but it does not extend to any other person than the employer. Hence if the building-owner is the employer the warranty will be limited to him, and will not extend to the builder, or to the outer world. The lithographed signature may be useful to the outer world as telling them where they can obtain any further necessary information as to the contents of the bills, and, I think, it is part of the duty of the surveyor to furnish any such information to any applicant who may be using the bills in the *bonâ fide* interest of the employer of the surveyor. I do not think that the attachment of the lithographed signature to the bills carries with it any warranty, or any liability further than as I have stated.

If a builder to whom bills of quantities have been issued by a surveyor, on behalf of a building-owner, goes to the surveyor and asks him, "Do you guarantee these quantities?" what should the answer be? As I think, of such a kind as shall not in any way mislead the builder, but should open his eyes to the real situation. Thus the answer may be, "Certainly I guarantee them to my employer, and I believe "the quantities to be correct, but if you wish for a guarantee "from my employer you must apply to him through his "architect." As I am not heroic I do not see that a surveyor should, under present circumstances, take upon himself a liability which does not follow from the nature of his employment.

Please do not taunt me with teaching Antinomian

doctrines, and as holding out to quantity-surveyors that they are at liberty to be careless, and to take "short quantities," or misrepresent the work to be done because they are not under a "law of liability" to the builder who bases his estimate upon their quantities. To any who would so construe my remarks, I say (1) that I am trying to set forth things as they are, each in its own order, not setting forth my wishes of what things should be, but of things as I have found them from legal precedents, and from reported cases in the law courts. (2) Grant, for a moment, that quantity-surveyors are not under a legal law of liability to the builder. I say that they are under a higher law than any mere legal law, under the law of "moral right," a law from which they cannot escape except they choose to live as swindlers, or as obtainers of money under false pretences. Do as they please they will find honesty to be the best policy, now and for all time; but, if "moral law" has little influence over them, I would say (3) that they are not yet out of the toils of the law as administered by the courts. They are undoubtedly under a liability to their employer, and if their employer, as he may do, sustains loss by their taking out short quantities, as well as if they had taken excessive quantities, the employer can recover against them for negligence for "short" as well as for "excessive" quantities. If this contingency seems too remote to goad them to do "right" they have not yet escaped from the legal meshes of liability for "misrepresentation," "gross negligence," and "fraud." This question of "misrepresentation" is far too legally technical for me to attempt to handle it thoroughly. How far the law can reach I will illustrate by analogous cases taken from the "Law Reports," only premising that what the law can do to other branches of the profession it can do, and will do, in similar cases, to quantity-surveyors.

As to "false representation" in *Swift v. Winterbottom* (8 L.R. 2 B.P. 253) Mr. Justice QUAIN said :—"It is
 " now well established that in order to enable a person
 " injured by a false representation to sue for damages, it is
 " not necessary that the representation should be made to
 " the plaintiff directly ; it is sufficient if the representation
 " is made to a third person to be communicated to the
 " plaintiff, or to be communicated to a class of persons of
 " whom plaintiff is one, or even if it is made to the public
 " generally with a view to its being acted upon, and the
 " plaintiff as one of the public acts on it and suffers damage
 " thereby."

The case of *Cann v. Willson* ("Professional Notes," vol. iii., page 49) is of great importance as establishing a liability for recklessness extending beyond a liability to the person to whom the representation was first made. A firm of solicitors being applied to by an intending mortgagor to negotiate an advance informed the borrower that they must have a valuation. The solicitors received from a firm of valuers and estate-agents, acting *on the instruction of the borrower*, a valuation of £3,000, and on the faith of this valuation the solicitors' clients lent £2,045 on the security. The mortgagor becoming in default, the property was put up for auction, and no bid was made beyond £680, and the property appeared to be unsaleable. The mortgagees thereupon brought, against the valuers, an action for damages. Then Mr. Justice CHITTY gives judgment. He held upon the facts that the defendants were aware that the valuation was required for the purpose of an advance, and that the document which purported to be a valuation was, in reality, no valuation at all. The plaintiffs claimed to be indemnified by defendants. It appeared to his lordship that the defendants had knowingly put themselves in the position of the defendants in *Heaven v. Pender*, and that

it was their duty to use reasonable care towards the plaintiffs. The delivery of the valuation was analogous to the sale of a deleterious article, and brought the defendants within the doctrine of *George v. Skevington*, where, in the case of a hairwash unskilfully compounded, it was held that an action would lie against a manufacturer, even though it might not have been shown that he knew of the noxious properties of his production. The defendants must be held responsible for gross negligence. In his judgment the defendants had no reasonable ground for stating that the property was worth £3,000, and had made a reckless statement within the technical doctrine of fraudulent misrepresentation. How they came to make it he was unable to say, but it was not suggested by the plaintiffs that the defendants had done anything which was morally wrong, and his judgment against them proceeded in no way upon that supposition. The case fell within the proposition of Lord Justice CORRON in *Peek v. Derry*, where he said that it was not necessary to make out what he should call "fraud," but "a departure from duty," and that in his opinion when a man made an untrue statement with an intention that it should be acted upon without any reasonable ground for believing that statement to be true, he made default in a duty which was thrown upon him from the position which he had taken upon himself, and violated the right which those to whom he made the statement had to have true statements only made to them, and a person so acting was liable civilly as much as a person who committed what was usually called fraud, and who told an untruth knowing it to be an untruth.

To apply this case change the names of all the parties—thus, for "mortgagor" read "building-owner"; for "solicitor" read "architect"; for "valuers" read "quantity-

surveyors"; for "valuation" read "bill of quantities"; for "mortgagee" read "builder."

The reckless quantity-surveyor may not feel happy in the application of this case.

If, after reading the foregoing case, there is any doubt as to what the Judges will hold to be an equivalent to fraud, it may be removed by noting a remark recently made by the MASTER OF THE ROLLS in his judgment in the case of *Priestley v. Stone*. His lordship said:—"It is true that "negligence is *evidence of fraud*. That we are all agreed "upon. Some people call it 'fraud,' and some 'evidence of "fraud.'"

So that even under present circumstances, although there may be no "privity of contract" between surveyor and builder, no duty owed under contract by surveyor to builder, yet, if I read the cases I have cited correctly, if the builder can establish gross negligence against the quantity-surveyor he may be able to recover damages against him for misrepresentation. But we must be careful. Negligence is more than one ordinary error, or perhaps two or three such errors, in a bill of quantities. For such errors, so far as I can see, the builder has, at present, no remedy. I will not even venture to say that one error in a bill of quantities may not be "negligence." If it is, it must be an error extraordinary in kind as well as in extent. I will not attempt to draw a hard-and-fast line. Every case must be determined on its own merits. But are there any of us who in the course of long practice have not come across a bill of quantities stamped with negligence from beginning to end? Unfortunately they are too common. If you ask me to define "negligence" I tell you I cannot do it, but I think I can approximate to doing it by using words as to a bill of quantities somewhat familiar to most of us. Treating the

bill as a whole I should say that it consisted in "leaving
 "undone those things which ought to have been done, and
 "doing those things which ought not to have been done."

I have treated this matter throughout as one of "right" and of "liability" under existing circumstances. I have thought it better to do so rather than to confuse my propositions with suggestions of expediency. Until circumstances are altered let us understand the circumstances as they are, and not encumber them with ideas of Utopia or of what ought to be. But if I find that the present system does not work well, works unfairly to any one of the parties interested, I say that it is not expedient that any system should be continued which does not work fairly all round. How does it work unfairly? When the unfairness is found, how can it be remedied so as to make it work well all round? Does the present system work well, or does it work unfairly? On the whole I think it works fairly well, but there are exceptions which should be remedied. Given honesty and right intentions in all the parties it rarely works to the injury of any one. Against dishonesty and selfishness you cannot fully guard by rules meant for honest working. But given accurate drawings and specifications, a competent and intelligent surveyor, an honest builder, detail drawings which are but drawings "at large" and not a means by which to obtain work not shown or implied by the contract drawings—given all these and what goes wrong? How will you better it? Look at the relative situations of all the parties. I would safeguard the employer in every possible way. He is not supposed to be acquainted with the technicalities of building, let him be protected; do not mislead him so that he may be called upon to pay more than he understood he was to pay, except for additional work which he had distinctly authorised by himself or by his recognised agent, the architect. How to protect the employer against any un-

authorised extravagance on the part of his architect does not fall within the scope of this Paper, but it is essential that security should be felt by employers as a class. If by any alterations of practice you produce distrust in employers the distrust will show itself in less employment of architects, surveyors, and builders.

I do not know that anyone wishes to alter the status of the architect as the recognised agent of the employer for all duties required of him as architect. But if you want things to work well do not make the architect the arbitrator in case of dispute between his employer and the builder. These disputes are technically between the builder and the employer, but usually they arise from disputes between the builder and the architect, and no man should be judge in his own case. And if you make the architect the arbitrator also, by so doing you place a protecting shield around him. The architect disappears in the arbitrator. An arbitrator can do no wrong, and any sins of the architect are absolved by his exercising the functions of arbitrator.

The builder needs less protection than the employer because the builder understands, or should understand, the technicalities of his business, and is usually perfectly competent to protect his own interests. But the builder should not be misled, should not be imposed upon by anyone; if he suffers a wrong by the act of others he should have his remedy. Let him bear all the responsibility of his own acts, but do not make him responsible for the acts of others over whose acts he has no control. A builder under the present system may be injured without any fault or contributory negligence on his part, and yet be without a right to obtain redress from anyone. I do not think that it is desirable that such a state of things should continue. Take an ordinary illustration. An employer engages an architect to design a building. This is properly done. The architect,

as agent, employs a quantity-surveyor. He prepares bills of quantities, and sends copies to builders for tenders. One tender is accepted, the employer and the builder enter into a contract, the work to be done according to drawings and specification for a specified sum. When the builder has finished his work he finds that he has had to supply and pay for a great deal more—say, slating—than he found in the bills of quantities. He is in a worse position than he expected to be by the amount of the difference in value between the slating for which he has had to pay and the slating for which he gets paid. He has done 50 squares of slating, and he gets paid, as per bills of quantities, for 40 squares. Is he to be a loser of the value of ten squares of slating? Strictly, I believe that he is. He has no claim against the building-owner, for he has undertaken to carry out the building according to the plans and specification, and these ten squares of slating are necessary to complete the building as shown and described. Of course the architect is not liable to pay him. Is the surveyor liable to pay him? If my view is right as to cases under Class III. he is not liable. The builder was not liable to pay him for the quantities. There was no privity of contract, no duty owed, how then can the surveyor be legally liable? If there had been 50 squares required, and 60 squares in the bills of quantities, would he have paid the surveyor the value of the excessive ten squares? Would he have allowed the employer to deduct the value of the excessive ten squares on the settling-up the balance due for the building? No, for the same reason that the employer is not liable to pay him where the ten squares were deficient; the builder fulfils his contract, the employer cannot ask more. So the builder puts the value of the excessive ten squares in his pocket, and the employer pays for ten squares never done. He may have his remedy against the surveyor,

but that is not my point now. Let us go back to the deficient ten squares.

What happens? If people keep their temper, and do not want to quarrel, something like this. The builder finds he is short of ten squares of slating, and he goes to the surveyor and tells him so. The surveyor looks through his papers, and detects the mistake, he says to the builder, I will see what I can do for you. He goes to the architect and explains the circumstances, and asks him if he will allow the builder the value of the difference at the final settling-up. Usually he will do so, and the builder gets paid, and the employer pays, say, £15, in addition to the amount which would strictly be due, but for which he has value received. If the architect says, "I cannot allow this, "I shall have quite enough to do to pacify my employer for "the extras which have accumulated, I cannot add to the "difficulty in this way"—what then? No one may be liable; but if the surveyor is an honourable man, desirous of providing things honest in the sight of all men, he will say to the builder, I am not liable to you for this deficiency, but I do not wish any builder to suffer loss by the oversight of myself or of my assistants, there is a cheque for £15, and I am sorry you have had the trouble arising from the blunder. Blunders will happen at times, let a surveyor be as careful as he will (is there one of us who, in the course of an extensive practice, has not paid builders for deficiencies whether liable or not?), and these blunders often arising from circumstances which would be ludicrous if they did not severely touch the pocket.

But, although these blunders are usually arranged somewhat in the manner I have stated, I cannot think it desirable that the course of procedure should be such as to leave a builder who sustains an appreciable loss, in the aggregate of a work, from short quantities, without a legal remedy

against anyone. I only fear that any alterations of the course of procedure may bring about more evils than those we are seeking to remedy. The only real builders-grievance which I know with which we as quantity-surveyors are concerned is that of occasional insufficient quantities—insufficient in quantity, or insufficient (*i.e.*, misleading) in description. The former will sometimes happen to the most careful of us, the latter ought almost to be put out of the category when speaking of competent surveyors. When it happens in a case where a competent surveyor has prepared the bills of quantities it almost always arises from imperfect descriptions given to the surveyor, or from the architect having overstepped the contract, and, by means of detail drawings, so called, or by other means, having obtained from the builder a more expensive article than was intended. No surveyor can guard against such things. If the builder is properly careful he will have every—so-called—working drawing examined and compared with the contract drawings before he has the work carried out. If he considers the work to be in excess of the work contracted for he should call the attention of the architect to the apparent excess before he executes the work, and not do the work first and grumble afterwards if he cannot get paid for any excess which may have so arisen. But as to the occasionally practical grievance of short quantities, can this be remedied so that the builder may obtain that which should be his own? I have heard many suggestions. (1) Make the employer pay, he has had the benefit of the work. I say, Do nothing of the kind. If he is willing to pay, well and good, but do not attempt to make him legally liable for the blunders, perhaps the gross blunders, of a quantity-surveyor whom he employed believing that he would do his work correctly. (2) A second suggestion is nearly similar to the first—make the quantities part of the contract. I have given my views on this subject already,

and I need not repeat them. I am afraid that, in practice, the remedy would be worse than the disease. (3) A third suggestion is, make the quantity-surveyor pay. Practically let him be liable to the building-owner, as he now is liable, and let him be liable to the builder for short quantities, and let not the builder be liable to him for excessive quantities.

Let us then consider the position of the surveyor. We have seen that he is liable to his employer if he fails to use reasonable care and skill in the preparation of the quantities, and that he may be liable to the builder for misrepresentation where that may be held to amount to evidence of fraud. The proposition is that he shall, in addition, be legally liable for all errors which may be discovered in his bills of quantities, to his employer for excess, to the builder for defect. In short, that he shall guarantee the accuracy of his quantities against all comers. How much I could urge against such a proposition must go unsaid. It appears to me to be theoretically absurd, but however absurd it may be in theory, can we by starting from some such principle as a basis work out a *modus vivendi*, for it is that for which we are seeking? How liable such a proposition would be to the grossest abuse if not carefully safeguarded need not be dwelt upon in detail, it is self-evident. The quantity-surveyor is not to be at the mercy of every whim and caprice of every quarrelsome and litigious person who may fancy himself injured, directly or indirectly, by an item or items in a bill of quantities. I do not know that I can set forth any scheme whereby if, with certain qualifications, the basis of this proposition is accepted as a starting-point, the surveyor shall be shielded from gross injustice, but I will make some attempt to do so. Any such effort can be but a tentative one, some ideas thrown out, as it were, for further development and maturing. Any such scheme must embody some conditions like the following, viz. :—

1. The surveyor must be brought out from his present semi-unrecognised position, and appear as the recognised agent—*ad hoc*—of his employer (the building-owner) and as the medium of communication for all matters relating to the quantities between the employer and the builder.

2. There must be a defined contract or agreement between the three parties—employer, builder, and surveyor. This may be formulated into any acceptable shape, and may be known by a short title when it has received the approval of the Council of this Institution, and such agreement may appear as a rider or appendix to the customary contract between the employer and the builder, and to this rider to the agreement the surveyor must be a party.

3. By such agreement, subject to certain restrictions, the surveyor would guarantee the accuracy of his bills of quantities, *as a whole*, alike to his employer and to the builder with whom the employer has contracted for the building. This would only alter his relation to his employer by perhaps some extension of liability beyond that which now exists, but it would involve him in a liability to the builder which does not now exist.

4. This warranty being given, the payment of the surveyor's charges, the amount being then known, must be guaranteed so that in the event of the employer making default the builder shall be liable to pay.

5. The surveyor shall only be liable for such errors as shall be clearly shown to have arisen from the acts of himself or of his assistants. Errors caused by imperfect or incorrect information furnished to him are not to be chargeable to the surveyor unless it shall be clear that in the exercise of ordinary skill he should have detected such causes of error. There was, and probably there is, a custom in the War Department for the surveyors to sign each of the

drawings as "one of the drawings from which the quantities were taken."

6. If either employer or builder considers he has a claim against the surveyor for errors, he shall at some time before the completion of the building furnish the surveyor with a schedule containing a precise statement of the alleged errors, and stating his intention to claim payment from the surveyor for such alleged errors. Only one schedule of claims to be allowed to be presented by employer and builder respectively for one contract, and no evidence to be allowed to be tendered as to any other alleged errors than such as shall be specified in the schedule or schedules.

7. If after weeks after such schedule of claims shall have been presented the surveyor shall have failed to satisfy the claimant, or to agree with him as to terms, the claimant may give notice that he will submit his claim to arbitration in the manner to be prescribed in the agreement.

8. Within fourteen days of the delivery of such notice of arbitration the surveyor shall supply to the claimant a written statement of reply to such claims, and, in his discretion, a schedule as a set-off containing a precise statement of any items in the bills of quantities alleged by him to neutralise any loss alleged to have been sustained by the items specified in the bill of claims.

How necessary it may be to set off certain works against alleged omissions or excesses of other works will be understood by all of us who have been engaged in settling accounts where the work is sublet in various trades. In one work I have known four claimants for extra works, which were really for substituted works, and, oddly enough, each of the four parties had neglected to notice the corresponding work which had been omitted in his trade.

The schedule of claims (see item 6) and this statement,

and schedule of reply, shall be the only statements of claim and defence to be submitted to an arbitrator.

9. In case of the claimant electing to proceed to arbitration, any such dispute shall be referred to a quantity-surveyor to be agreed upon by the parties, failing such agreement, to a quantity-surveyor to be named by the then President of The Surveyors' Institution, such arbitrator to have all the powers of an arbitrator under the Common Law Procedure Act, and his award to be final and binding on both the parties.

In addition to the usual powers of an arbitrator as to costs, he shall be authorised, if he considers the claim to have been improperly made, or unreasonably defended, to award special costs as compensation for loss of personal time or expenses to the party who has suffered from such improper claims or unreasonable defence.

10. Except by special permission of the arbitrator no evidence shall be allowed to be given by any person except by the parties to the dispute, and by one quantity-surveyor on each side; no counsel or solicitor to be allowed at such reference.

11. *De minimis non curat lex*. No claimant shall be allowed to proceed to a reference unless the schedule of claims shall amount in the whole to, at least, () per cent. upon the total amount of the contract between the employer and the builder.

Will some such scheme be satisfactory to the builder? If so, to make an end of the present dissatisfaction, I should say, Let them have it. But that quantity - surveyors should take upon themselves a liability which does not at present exist, without any safeguard or corresponding advantage, I should say, Certainly not.

There is a point of practice connected with quantities which I should like to be settled. Is the builder entitled to

demand a copy of the dimensions? If he is not the employer, certainly not; but waive liability for a little, and suppose the builder to be the employer, or that the copy is asked from the nominee of the builders where two surveyors have been employed. Should he have such a copy? I have always said, No, but others have said, Yes. I think that it is the result, the bills of quantities, which should be supplied, not the means by which such results have been obtained. Take an illustration, I order a coat from a tailor, if it fits me I pay him. Should I ask him to give me a copy of the dimensions he took, and the paper patterns he had cut to make the coat? Bills of quantities should be intelligible to every intelligent builder, but dimensions are not necessarily intelligible to anyone but the person who takes them, and to him they should be as clear as if they were written out at the fullest length, instead of, as they are, abbreviated according to the fancy of each surveyor. Bills of quantities should only be used for the purpose of making an estimate, and, as a help, in calculating any variations in the work at the settlement of the accounts. They should not be used, and the dimensions should not be used, as precise data from which to order materials, or to determine the lengths to which timber or stone should be cut. And dimensions may be mischievous in unskilled and incompetent hands. I can understand their doing harm to a builder, but what benefit they can be to him I fail to see. But as it has been thought by some eminent surveyors that the builder should have the dimensions if he applied for them, it is desirable that the point of practice should be settled.

Before proceeding to the consideration of the recent case of *Priestley and Gurney v. Stone*, it will be expedient to look at some earlier cases in which quantity-surveyors do not directly appear, but in which bills of quantities played a prominent part. Some important cases are—

Scrivener v. Pask, 18 C.B.N.S. 785; L.R. 1 C.P. 715.

Stevenson v. Watson, L.R. 4 C.P.D. 148; 48 L.J. C.P.D. 318.

Young v. Blake, Sur. Inst. "Prof. Notes," vol. ii., p. 343.

I can only refer to the leading features of each as they touch upon bills of quantities, and the liability for such bills. In each of these three cases a builder was plaintiff; the architect had prepared the bills of quantities, and in each case the builder failed to recover.

Scrivener v. Pask was an action by a builder against a building-owner to recover payment for short quantities which had been prepared by the architect, apparently without the knowledge of his employer, which quantities the architect had represented to the builders as accurate, and for which the architect's charges had been paid by the builder. In this case Mr. Justice BLACKBURN said:—"To entitle the plaintiffs to recover they must make out three things—(1) that the architect was defendant's agent; (2) that the architect was guilty of fraud or misrepresentation; (3) that the defendant knew of it and sanctioned it. There is no evidence here of either of these things. If there has been misconduct upon the part of the architect the plaintiffs have their remedy against him." Of this case Mr. EMDEN, in his "Law of Building Contracts," p. 54, says:—"It will be seen that the builder, under such circumstances, takes the whole risk of the bills of quantities being inaccurate, or being prepared by incompetent persons." I have already quoted some observations of Mr. Justice DENMAN referring to this case; in his judgment in *Young v. Blake* his lordship says:—"Scrivener v. Pask at least goes so far as this, that unless there is something binding the owner, some understanding between the parties to be gathered from correspondence or words making himself liable for the taking out of the quantities, that he is not so liable."

I confess that I do not understand Lord BLACKBURN's remark:—"If there has been misconduct on the part of the architect the plaintiffs have their remedy against him." But the architect was not made a party in the cause, Lord BLACKBURN was not trying the case of the architect, if he had been, the *dictum* would have been more important. There may also be a legal meaning in the word "misconduct" which goes beyond ordinary interpretation, such as misbehaviour or mismanagement.

Stevenson v. Watson was an action by a builder against an architect for wrongly certifying the final balance due to the plaintiff. The architect had prepared the quantities, and they were made part of the contract. This is explicitly stated with an explanatory clause.—"Should there be more or less measure than is here given (*i.e.*, in the bills of quantities) there will be respectively an addition or a deduction from the contract. All measurements to be made in the same manner as the quantities have been taken, and all additions and deductions to be priced out at the same rate by the architect." *The architect was made arbitrator under the contract.* When the work was finished the plaintiff sent the defendant a detailed account showing the amount of the additions ordered by the defendant and of the deficiencies in the bills of quantities, and deducting the amount of the deductions ordered by the defendant showing a balance due to the plaintiff of £1,616. Defendant, without calling on the plaintiff for any explanation, and without communicating with him, sent to the employers and to the plaintiff a certificate for a balance of £251. Plaintiff then applied to defendant asking to be allowed to give explanations to show the correctness of his accounts, but defendant refused to hear any objections to his final certificate. Action was then brought for the difference between the claim and the amount of the certificate—£1,365. Judgment was given

for the defendant on the ground that his decision as arbitrator could not be impugned. Lord COLERIDGE stated his reasons in various ways, but Mr. Justice DENMAN in referring to this case, in the case of *Young v. Blake*, states the reasons very clearly as the joint judgment of Lord COLERIDGE and himself. He says that "the functions of
 " the architect in ascertaining the amount due to the plaintiff
 " were not merely ministerial, but such as required the exercise
 " of professional judgment, opinion, and skill, and that he
 " therefore occupied the position of an arbitrator against
 " whom, no fraud or collusion being alleged, the action would
 " not lie." Lord COLERIDGE had phrased it:—"An action will
 " not lie against the person put in that position when such
 " judgment has been wrongly, or improperly, or negligently
 " exercised."

Young v. Blake and another was an action by builders against a building-owner and his architect to recover payment of £570 for short quantities, in bills which had been prepared by the architect with the knowledge of the building-owner, which quantities had been made part of the contract, and for which the builders had paid the architect. The architect was arbitrator under the contract. The clause as to quantities was as follows:—"The bills of
 " quantities supplied by the said architects are believed to be
 " correct; but should any error or misstatement be found
 " therein, either in favour of or against the said contractors,
 " it shall be lawful and in the power of the said architects
 " to measure any or all of the works contained and described
 " in the said bills of quantities, and to adjust the same in
 " accordance with the prices therein contained and whereon
 " the said tender was based and the work undertaken, and
 " the said contractors shall for this purpose produce on
 " demand to the said architects the said priced bills of
 " quantities."

On the completion of the building the builders considered the quantities very short, and they pointed out the omissions to the architects, and submitted a detailed account to them. It does not appear that the architects measured the works or any portion of them, and the builders brought their action. It was heard before Mr. Justice DENMAN, and he gave judgment for the defendants—the building-owner and the architects—mainly on the precedents of *Scrivener v. Park* and *Stevenson v. Watson*. As to the clause as to the bills of quantities his lordship said :—“ It appears to me that it “ is a discretionary power given to the architects making “ it lawful and in their power to measure any or all of the “ works. I do not think that that gives the power, upon “ the mere assertion of the builders that there is an error or “ misstatement, to compel and to call upon the architects “ as a matter of right to remeasure the work. I think that “ the meaning must be that the architect must be left in “ the discretion to remeasure if he finds there is reasonable “ ground to think that there is an error or misstatement of “ the works, and that then he may remeasure them and may “ adjust them.”

As to the architects' position, his lordship said :—“ The “ architects here are made by the parties persons in a “ *quasi*-judicial position, they are persons who unless they are “ guilty of fraud or misconduct of any kind beyond mere “ allegations of negligence are not to be harassed with actions “ against themselves, nor are the people whose architects they “ are as well as the architects of the other party to be “ harassed with actions merely because the architect in his “ discretion may refuse on the demand of the builder to re- “ measure any of the works ” ; and further :—“ The allega- “ tion of negligence to my mind is one which does not give “ a cause of action upon such a contract as this. It puts the “ architects in the position of persons trusted by both parties,

“ and if a man with his eyes open chooses to enter upon
 “ such a contract giving the architects the power, he cannot
 “ turn round and by a mere allegation of negligence say, ‘ I
 “ ‘ have discovered that there was an error in the measure-
 “ ‘ ments, and I have asked you to act under the contract,
 “ ‘ and you won’t do it in your discretion, but I will now sue
 “ ‘ you because you negligently took out the quantities.’ ”

These cases are very lamentable because in them there is every appearance of gross injustice having been done under the protection of the law. They stand for warnings.

It will be noticed that in neither of the three cases just referred to was there any allegation of fraud or collusion, and in each of the cases the builder-plaintiffs failed to recover. I will now mention one other case in which the builder succeeded. It is a very similar case to the others, and runs nearly on all-fours with *Stevenson v. Watson*. The employers engaged an architect, with their knowledge he took out the quantities which were made part of the contract, and he was arbitrator under the contract, and gave a final certificate or award before the builder brought his action to recover the amount for short quantities and misdescription. These quantities were bad enough, but do not appear to have been worse, relatively, than those in *Stevenson v. Watson*, and *Young v. Blake*, and not so bad as in *Scrivener v. Pask*, but the builder recovered. The case is unfortunately not reported, but the whole of the facts came before me at the time (1881), and I have the pleadings and the detailed particulars. The parties to the action were BROWN, the plaintiff, a builder, and the defendants were the Bridlington Burial Board.

The first tender for the cemetery buildings was £5,932, more than twice the amount contemplated. The architect proposed many reductions, he redesigned the entrance lodge, and proposed to alter the details throughout. He and the builder made a revised estimate for £3,808, for which sum

a contract was entered into. From the commencement of the works, without the knowledge of the Board, the architect reverted to the original details, elaborating rather than diminishing them, and when the works were nearly finished he measured up the whole of the works, and valued them on the basis of the original prices, and gave an award for £5,272 for the whole. The builder employed some local architects of good standing, who also measured all the works and valued them, irrespective of the prices in the bills of quantities, and the builder sent in a claim for £11,109 for the whole. Failing to obtain any recognition of his claim, or to obtain a reference of the whole matter to an architect, BROWN brought his action against the Burial Board. His advisers did not proceed on the lines of the three cases we have considered, but brought the action in the Chancery Division, and not in the Queen's Bench. In the plaintiff's statement of claim, which extends to ten pages of regulation size, he set forth the leading items of excessive cost in thirteen paragraphs, and charged the architect with fraud and misrepresentation in these words:—"The plaintiff was "wholly misled and deceived by the reduced bills of "quantities and prices in making his tender, and in entering "into the contract. The bills of quantities and prices were "made out by the architect knowingly and designedly for "the purpose of inducing the plaintiff to enter into the "contract by misrepresenting the cost of the work"; and he claimed "that the said contract is not binding upon the "plaintiff and ought to be rescinded." In the next paragraph he says:—"The said architect made out the said "quantities partly in order that the defendant Board, whose "agent he was, might be benefited thereby, and partly in "order to secure the profits and commissions which would "accrue to himself if the contract were entered into." The plaintiff claimed:—

1. That the said contract, or alleged contract, may be declared not to be binding on the plaintiff, and may be set aside and cancelled.

2. That, in the event of the said contract being so set aside and cancelled, the defendant Board may be ordered to pay to the plaintiff the sum of £6,874, or such other sum as the plaintiff shall, on inquiry, be found to be entitled to;— and such further sum as this Honourable Court may think fit and award for damages for the misrepresentation whereby the plaintiff was induced to enter into the said contract.

Then follow several alternative claims.

The statement of defence traversed all the allegations in plaintiff's statement at great length, extending to seventeen printed pages.

Before the hearing of the case the plaintiff's advisers carefully worked up all its details, and the defendant Board went to great expense in having the whole business thoroughly examined by experts. At the hearing before the VICE-CHANCELLOR, almost as soon as plaintiff's counsel began to open his case, a general consultation took place, and, contrary to the usual practice in the Chancery Division, it was agreed to refer the case to Sir HENRY A. HUNT, all imputations of fraud being withdrawn. Sir HENRY heard the case, almost wholly without counsel, and received full detailed bills from plaintiff's architects, and the defendants' surveyors, and he awarded the plaintiff a considerable sum, although not nearly so much as he claimed. However, the builder certainly obtained all he was entitled to on the merits of the case, and therein is the contrast to the other three cases we have considered. There was no more fraud, and perhaps no less, on the part of the architect of the Bridlington Board than there was on the part of the architects in the other cases. But the allegation of fraud and misrepresentation was made, and by it the plaintiff

obtained a hearing on the merits of the case, which hearing was not obtained in either of the other cases.

It is not within my province to enter into a discussion as to the different methods of legal procedure. I only state this last case as I know it, as the professional adviser to the Board.

Let us now look at the recent case of *Priestley and Gurney v. Stone*, or "A Story of how not to do it." This is a most exceptional and isolated case, I should think almost without a parallel, and so far from being a typical case, it is difficult to see how it can be used as a precedent in cases hereafter; but the case is of the utmost importance to us in having drawn out the clearest judgment on points of law and of liability, and as having, I hope, once and for all, extinguished the theory of the "shifting" or "passing over" of a contract from the employer to the builder, so far as the quantity-surveyor is concerned.

The leading facts of the case need special attention from all who wish to understand the judgment thereon, they are these :—

A clergyman wanted a church, and he employed an architect to prepare the design, to obtain tenders, and to engage a quantity-surveyor to prepare the bills of quantities. So far so good. The architect engaged the defendant *STONE*, and arranged with him as to the terms of payment. He sent *STONE* some incomplete drawings to a small scale, in pencil, and gave him a few verbal instructions, some of them mischievous ones. *STONE* asked no further questions, took out the quantities as best he could, not including or notifying some necessary works which the architect had told him to leave out, had the bills lithographed, and sent them to the architect with the unfinished drawings in pencil. This is the beginning and end of *STONE*'s connection with the quantities, so far as work is concerned. He took no further trouble

about the business, left everything to the architect, and trusted that all would be right. The architect *finished* the drawings, and added others. In *finishing* the drawings he materially altered them.

STONE says, in his answer to interrogatories:—"The plan marked B was never before me at all when I prepared the said quantities. The plans C, D, E, and F were before me, but since they left my hands they have been altered in several particulars."

Mr. Justice STEPHEN says, in commenting on the evidence of the architect:—"This shows that the design is altered in a material particular after the quantities were taken out, that alteration in respect of the plan would run through the whole estimate"; and "he (the architect) said he had to alter everything." At some later date the architect wrote the specification. He included several things not taken in the bills of quantities, elaborated the doors and practically treated the quantities as non-existent. STONE was not consulted about the specification, and was not informed of the alterations in the plans. The architect advertised for tenders. Quantities to be obtained from him on payment.

PRIESTLEY and GURNEY's first tender was £3,750. This was more than the clergyman wished to spend. The architect and PRIESTLEY and GURNEY then revised the work without STONE's assistance, and the original tender was reduced by £576.

PRIESTLEY and GURNEY state that in answer to their inquiries the architect said that the drawings and specification were those from which the quantities had been prepared. To make assurance doubly sure the architect inserted a notable clause in the contract to which much reference was made during the hearing. This Clause XI. says:—"The contractor will be allowed the opportunity, and must

“ previously to signing the contract examine the drawings
 “ and specification and compare them, if requested, upon the
 “ site with his estimate, so as to satisfy himself that his price
 “ includes all the works and materials shown or described in
 “ the specification and drawings which constitute the contract,
 “ as no departure or alteration will be allowed to be made
 “ from or in his tender in the event of any error therein being
 “ discovered however arising.”

As to this clause Mr. Justice STEPHEN said :—“ This
 “ clause shows that the building-owner, and his architect, and
 “ more particularly the architect, were well aware that they
 “ might be liable for the estimate on which the matter was
 “ based ; and that they determined that they would not be
 “ liable, but would throw the liability upon the builder
 “ himself by the express terms of Clause XI. I can hardly
 “ conceive how there could be another intention than that
 “ which appears to me to be plain common sense in itself
 “ that the contract is between the owner and the contractor,
 “ and that the owner will not be liable for any alterations or
 “ anything there may be in any want of correctness however
 “ arising which has taken place in the early stages of the
 “ matter.” The contract being signed, including these
 stringent conditions, the works went on. The builders were
 not long in finding out that they had a bad job, partly
 arising, doubtless, from their prices being too low under any
 circumstances, and partly from their having to do more
 work than they had included in their estimate. The works
 being finished, and the loss being serious, they would
 naturally look about for some remedy.

It would probably be impossible to state now, exactly
 how far, at that time, the builders knew the precise bearing
 of all the facts of the case as they are now known, but
 probably having a wholesome dread of the effect of
 Clause XI., and being fettered also by the case of *Scrivener*

v. *Pask*, and either not knowing the whole circumstances, or being unwilling to charge the architect with wilful misrepresentation, they were advised to bring their action against the quantity-surveyor who was at the time threatening to sue them for the balance of his charges which the builders would not pay unless he would give them a letter making himself liable for any deficiencies in the quantities. STONE, in fact, did commence proceedings to which the builders replied by an action against him for damages which they had suffered from the defendant's negligence and breach of duty.

However careless *Priestley and Gurney* may have been in signing the contract they were careful enough to entrust the preparation of their case to an eminent firm of quantity-surveyors, and with such aid as they could obtain from drawings, specifications, bills of quantities, and the works as executed, these surveyors made out a formidable bill of alleged deficiencies, and on the basis of this bill the action was brought for £689. The two actions of *Stone v. Priestley*, and *Priestley v. Stone* were amalgamated by order of a master. The builders sued for £689 and STONE for £28 4s. 4d. the balance of his total charges of £80 14s. 4d., of which £52 10s. had been previously paid by the builders, this action of STONE's being subsequently termed a counter-claim.

In plaintiffs' statement of claim they alleged that they had suffered damage from defendant's negligence and breach of duty as a quantity-surveyor, *of, and for, the plaintiffs*; that defendant, in consideration that the plaintiffs would agree to pay him his stated charges if their tender was accepted, supplied for the use of plaintiffs a bill of quantities, and defendant represented that these quantities would be sufficient for building the church according to plans and specification; that it was the duty of defendant to use

ordinary care and skill in the preparation of the quantities, as he well knew that the tenders would be based on the quantities, and that if they were insufficient loss would be occasioned to the persons tendering; that defendant warranted the accuracy of the quantities; that plaintiffs relying on defendant having used ordinary care and skill, and on his warranty, based their tender on the said bills of quantities, and entered into a contract to build the church according to said plans and specification for the amount of their tender, which contract they performed; that defendant did not use ordinary care and skill in the preparation of the said quantities, and did not correctly set forth detailed particulars of all works and materials required for the building according to plans and specification.

The particulars of loss were set forth in an accompanying statement—and plaintiffs claimed £689. STONE in his statement of defence denied that he was employed by plaintiffs as quantity-surveyor. He stated that there was no privity of contract between plaintiffs and defendant, and defendant did not owe the plaintiffs any duty; that he had not been guilty of negligence or breach of duty; that the bill of quantities was not supplied by defendant to plaintiffs, but to the architect, and it was not supplied in consideration that plaintiffs would agree to pay defendant therefor, but in consideration that the building-owner would cause him to be paid the amount of his charges which were fixed by an agreement made with the architect. He denied the warranty. He states that the plaintiffs did not rely on any representation or warranty of defendant, but did rely either on their own investigation or upon the representation of the architect; that he did use ordinary care and skill; that he was instructed by the architect to prepare a bill of quantities according to *certain* plans supplied by the architect, and according to certain verbal instructions given by the

architect; that the architect did not supply defendant with any specification, and did not prepare one until after the bill of quantities was finished; that the bill of quantities correctly set forth the particulars of all work and materials required according to the *said* plans and instructions; that after defendant had delivered the bill of quantities to the architect several alterations were made in the works of the intended building, and in the *said* plans, without defendant being consulted thereon; that the total amount of work and materials in the bill of quantities is not less than the total amount shown to be necessary by the *said plans*, &c., handed to defendant by the architect.

The counterclaim we will consider separately.

In his answers to interrogatories, STONE refers to the alterations in the drawings and the absence of a specification. He explains the omission of certain stone cores to cornices and iron bond as arising from express instructions by the architect to omit them. He denies that plaintiffs arrived at the amount for which they contracted by simply pricing out the particulars appearing in the bill of quantities, and says that before they contracted to do the work they reduced their estimate by £576; but in what way the reduction took place, or in what way the quantities were affected by that reduction, he cannot say, as he was not consulted in the matter. He entered into a detailed explanation of many alleged omissions as arising from the alterations in the drawings or from entries in the specification in excess of the verbal instructions given to him. He admits certain trifling omissions, valued in all at about £12, but claims that these are more than set-off by other items taken in excess.

At the hearing in January 1888, before Mr. Justice STEPHEN, the plaintiffs' case was endeavoured to be established on the ground of an alleged custom of the trade by

which privity of contract between plaintiffs and defendant was sought to be established, and also on the ground of inaccurate statement of facts—*i.e.*, short quantities. It was agreed that the question of liability only should be settled by the Judge, and if he found, on the question of liability, in favour of the plaintiffs, the details of the alleged deficiencies were to be referred to arbitration. Plaintiffs' counsel were heard fully on the custom sought to be established, and this custom was set forth as follows:—"The employment is "originally by the building-owner; the quantity-surveyor "upon that employment does certain things. As soon as the "tender of the successful builder is accepted, then the liability "which the building-owner was under to pay for these quantities shifts to the builder. The builder becomes liable, and "then there is a corresponding liability on the part of the "surveyor to be answerable (to the builder) for any negligence in the quantities."

This is the custom which the learned counsel for the plaintiffs, Mr. MEADOWS WHITE, Q.C., said, in a paper read before the R.I.B. Architects in May last, in referring to this case, failed to be established even upon the evidence of the first witness called for the plaintiffs.

Having heard plaintiffs' counsel and witnesses, without hearing the defence Mr. Justice STEPHEN gave judgment. His lordship said:—"There must be a nonsuit; there are "substantially two points—(1) that there is a contract, "(2) that there was misrepresentation. If the plaintiffs are "under a misrepresentation or have anything to complain of "in regard to the quantities which they acted upon, they "must go against either the building-owner or the architect "who made these representations. The evidence about "custom on the whole case appears to me not only unsatisfactory and vague in itself, but as far as it went was

“ rather in favour of the defendant than in favour of the
 “ plaintiffs. Clause XI. is intended obviously to put an end
 “ to the question. Suppose it were not there ; the man who
 “ made the estimate (the builder) would say, I know nothing
 “ about your quantity-surveyor, you have represented to me
 “ that these quantities are correct, I made my estimate from
 “ these quantities, I have been deceived, you must pay me
 “ damages because you induced me by false representations
 “ to make an improvident tender.” (His lordship then read
 and commented on Clause XI., for which see *ante*.) “ The
 “ quantity-surveyor if he did anything wrong would be liable
 “ to his architect and the building-owner for any damage he
 “ has caused to them. Apart from that I cannot see that
 “ there is any further liability unless such liability can be
 “ proved.” (For his lordship’s remarks as to the alteration
 of the drawings by the architect see *ante*.) His lordship
 further said :—“ If the architect has made serious alterations
 “ after the estimate is drawn up, it shows to my mind clearly
 “ that the representations made by it might very well be the
 “ representations of the architect and not the representations
 “ of the quantity-surveyor, because they apply to different
 “ things. He (the architect) said he had to alter everything.
 “ It is impossible to say that the representation made to the
 “ contractor is the same representation which STONE
 “ authorised the architect to make to anybody, and therefore,
 “ I say, it is the architect’s representation and not STONE’s
 “ representation, and the only representation from STONE is a
 “ representation to the architect which, if inaccurate, or if
 “ the architect is damaged by it he may take his remedy for
 “ it. Nonsuit with costs.”

Judgment was then given, on application, without comment, on the counterclaim for STONE, with costs.

The builder-plaintiffs having thus failed in their case

against STONE, and STONE having succeeded in his case against PRIESTLEY and GURNEY, let us now look at the counterclaim to see the case on which STONE succeeded.

In his statement of counterclaim STONE said :—"The defendant" (STONE) "was employed by the architect, as agent of the building-owner, to prepare the bill of quantities, and it was agreed between the architect and the defendant that the defendant should be paid $1\frac{1}{2}$ per cent. on the amount of the accepted tender as well as the cost of lithography. It was afterwards agreed between the building-owner and the plaintiffs (the builders) that the building-owner should pay to the plaintiffs the amount of the defendant's charges (£80 14s. 4d.) and that the plaintiffs should then pay this amount to the defendant. The building-owner has paid the said sum for the express purpose of the same being paid over by the plaintiffs to the defendant. The plaintiffs have admitted to the defendant that they received the said sum for the defendant's use and have promised the defendant to pay the said sum to him. The plaintiffs have paid to the defendant £52 10s., part of £80 14s. 4d., but have failed to pay the balance £28 4s. 4d. The defendant claims £28 4s. 4d."—which sum he recovered. In fact the plaintiff-builders had always been ready to admit their liability to STONE for the amount of his charges, but they sought to set against this liability part of the alleged short quantities. As they had failed to establish the liability of STONE to them they had to pay him the money which they had received from the building-owner for his use. There is no conflict between the decisions, the one, exonerating STONE from any liability to the builders, and the other establishing the liability of the builders to STONE, for the two cases rest on totally different bases—the first endeavoured to prove a liability on contract which failed, the

second was for money had and received which was admitted.

As to whether or not the quantities taken out by **STONE** from the pencil drawings were "short" as a whole, that question has never been determined, and never will be. The builders doubtless still believe that the quantities were short; while **STONE** as stoutly maintains that they were ample.

The decision of Mr. Justice **STEPHEN** made some stir in the trade and in the profession, but as it was announced that the case was to be argued before the Court of Appeal all waited the result of such appeal.

The appeal was heard in July 1888 before the **MASTER OF THE ROLLS**, Lord Justice **LINDLEY**, and Lord Justice **BOWEN**; a very strong Court.

The builders' case was most persistently argued by Mr. **EDWYN JONES**. Although the opinion of the Court was manifestly against him from the beginning, the learned counsel struggled manfully to establish his case. He relied on custom and misrepresentation. As to custom it was that set forth at length in noticing the hearing in the Court below. He sought to prove privity by custom, and by that only. It was admitted that this was the first case in which this custom had been endeavoured to be established in a Superior Court. There was no reported case which could be found in which the liability of a quantity-surveyor to a builder for deficient quantities had been established. This drew from the **MASTER OF THE ROLLS** the remark:—"You are seeking to prove custom. You say you prove a well-known custom, and nobody has ever heard of a case." After much pressure the learned counsel had to admit that as to custom his case was gone. He then relied on "the holding out these things as correct." He said:—"I ask you to say that the relationship existing

“between the surveyor and the builder is such that the quantity-surveyor if negligent is liable to the builder.” He cited various cases bearing collaterally on the question, some of which were read at length, but he was met at all points by the Court:—“There is no fraud here, no allegations of fraud. You should have said, ‘I am going to show not only that there were mistakes, but that they were so reckless and careless as to amount to fraud.’” “The surveyor may have been negligent as against the architect, but the question is whether he owed any duty to all the world of builders.”

Their lordships gave judgment dismissing the appeal without hearing the counsel for the defence.

The MASTER OF THE ROLLS in his judgment showed that he was quite unacquainted with the ordinary procedure as to bills of quantities, and when he generalised, *i.e.*, went outside the case of *Priestley v. Stone*, he made several slips which a surveyor might irreverently call talking nonsense; but his lordship talked no nonsense as to the case he had before him—the thing with which he had to deal. The leading points in the judgment may be thus stated:—“This is a contract between the architect and the man who takes out the quantities, the architect employs that man, and he has to pay that man; therefore the contract, if any, is between the architect and that man, or between whoever is the principal of the architect, and that is the only contract.” “There is no evidence of negligence in the way of taking out the quantities, none whatever.” “It is true that negligence is evidence of fraud, that we are all agreed upon; some people call it ‘fraud,’ and some ‘evidence of fraud,’ but there was none here, because it was arranged that the question of how great the errors were, or what the errors were, was to be left until after the liability was

“decided by the Judge; then those who agreed to that if they wanted to rely upon the amount of error as showing gross negligence and reckless statement ought to have presented that, because that is the question upon which liability depends.” “There is no evidence upon which the learned Judge could be asked to find anything against the defendant.”

Lord Justice LINDLEY did not generalise; his judgment is remarkably lucid. His lordship said:—“The action was brought upon two grounds, (1) that there was some sort of contract between plaintiffs and defendant. That breaks down. There is no contract between the two, and the alleged custom which was relied upon as establishing such a contract was not proved. *If the custom had been proved I do not know whether it would be good for anything.*” His lordship then referred to the case of *Bradburn v. Foley*. This was an agricultural case in which some custom was proved as between an outgoing tenant and the landlord by which the incoming tenant although not a party to the arrangement between the others was to be bound. It was referred to during the argument before the judgment with a remark, “That custom would bring two people together who had never been together at all, and such a custom must be bad.” His Lordship continued:—“This custom has not been established as a fact, and if it were, that authority (*Bradburn v. Foley*) goes to show that the custom is nothing, and there is no contract. The second ground was that STONE made a negligent representation to plaintiffs in order that plaintiffs might act upon it, and that that being the case, the representation having been made, and the plaintiffs having suffered damage they are entitled to maintain an action in order to prove that suggestion. Look at the facts. The quantity-surveyor is

“ employed by the architect, and the architect acts as agent
 “ for the building-owner, at all events a quantity-surveyor is
 “ not employed by a builder, although it appears to be cus-
 “ tomary that the successful builder shall pay the surveyor.”

“ These quantities are supposed to be made with reference
 “ to the instructions given at the time, and suppose that
 “ after the quantities were taken out they desired to change
 “ (the design) and yet the architect laid the quantities before
 “ the builders with the design ; how is this to be turned into
 “ a representation by the surveyor to the builder that the
 “ quantities taken out are applicable to the changed state of
 “ things ? *Under the circumstances* there is absolutely no
 “ proof of want of possible care, or anything that should
 “ make the action stand.”

Lord Justice BOWEN was equally lucid. His Lordship said :—“ This action is without any precedent. In this case
 “ there are two fatal difficulties—(1) there is no privity be-
 “ tween the builder and the surveyor ; and (2) there can be
 “ no duty out of which the supposed liability arises, because
 “ whatever duty there is must be a duty arising out of the
 “ relations between the two, and if there is no privity be-
 “ tween the two there really is no responsibility.”

“ However, it has been suggested that the surveyor
 “ made a statement which is a misstatement knowing it is
 “ to be handed on to a third person, and therefore is liable
 “ to the third person provided the case comes within the
 “ doctrine of false representation as in the case of *Peek v.*
 “ *Derry*. But all the surveyor does is to represent that
 “ these are his quantities which he believes to be accurate.
 “ As to that being a false representation, how can you say
 “ that any amount of negligence on his part in taking it out
 “ unless it amounted to recklessness ; any amount of
 “ negligence unless it was so gross as to raise a suspicion

“ of fraud, in which case it would be evidence of fraud,
 “ makes it fraudulent? But mere negligence would not
 “ make the representations fraudulent. Evidence of negli-
 “ gence in the quantities is not enough to render him liable
 “ towards the builder, because there is no privity—no duty
 “ between them—and in the absence of misrepresentation
 “ there is no liability.”

Appeal dismissed with costs.

Comment upon these judgments would almost be impertinence. Anyone with an open mind must see that the judgments are right, and that the action of *Priestley v. Stone* should never have been brought. Doubtless the plaintiffs have suffered wrong, and we should probably not have much difficulty in deciding who was the principal wrongdoer, but this would not be the quantity-surveyor.

But the judgments have an importance for us and for the building world, far beyond the exceptional case of *Priestley v. Stone*. They have laid down general principles which go to the root of all relationships between quantity-surveyors and builders. If I were to select portions from the judgments as of paramount importance to us all I should probably take some words of Lord Justice LINDLEY:—“ In point of fact
 “ there is no contract between the two (the builder and the
 “ surveyor), and the alleged custom which was relied upon
 “ as establishing such custom was not proved. If the
 “ custom had been proved I do not know whether it would
 “ be good for anything. It appears to me in that respect
 “ that this case is wholly analogous to the alleged custom
 “ which came before the Court in *Bradburn v. Foley*, where it
 “ was attempted to be made out that there was a custom by
 “ which the incoming tenant paid for something, this custom
 “ has not been established, and if it were, that authority
 “ goes to show that the custom is nothing and that there is

“no contract.” And with these words I should couple some from Lord Justice BOWEN :—“It seems to me that “there are two fatal difficulties (in plaintiff’s case); in the “first place there is no privity between the builder and “the quantity-surveyor, and in the second place that there “can be no duty out of which the supposed liability arises, “because whatever duty there is must be a duty arising out “of the relations between the two, and if there is no privity “between the two there really is no responsibility, and how “can this arise?” These two extracts seem to me to apply generally to our practice, and not only to the case of *Priestley v. Stone*.

Have they not finally extinguished any supposed custom whereby on the signing of a contract the liability of a building-owner to pay the surveyor for his quantities passes over from the building-owner to the builder; and the liability of the surveyor for the accuracy of his quantities passes over from being a liability to the building-owner to being a liability to the builder? To me this supposed shifting of liability was always a delusion, but it has been most tenaciously held, alike by builders and by quantity-surveyors. We must now be content to do without it, and we must also seriously consider what is really the relationship of the quantity-surveyor to the builder, and of the builder to the quantity-surveyor.

Although to a practical surveyor the differences between the quantities in *Priestley v. Stone*, and the quantities in an ordinary case, are sufficiently obvious, it seems desirable to state what these differences are for the better information of those whose occupation does not compel them to know the whole process of the manufacture of a bill of quantities.

The principal differences are these :—

1. Quantities are not usually taken out from imperfect

drawings in pencil. If this is done in very exceptional cases the surveyor usually, in some way, keeps "touch" with the drawings, and sees that the finished drawings correspond with those from which he worked.

2. There is usually a specification, or an approach to a specification in the shape of written instructions. If there is no specification the quantity-surveyor often writes it after the quantities are taken off, and for my part I always prefer to work from full notes, and to write the specification afterwards from the quantities rather than to have an elaborate specification in the first instance, which elaborate specification, when it is provided to begin with, is usually found to need many alterations and additions when the quantities are taken out. It is, however, a most exceptional, and a most improper thing for an architect to write a specification after the quantities have been prepared without the assistance of the surveyor in its preparation, or at least the surveyor revising it after it is written.

3. Architects are usually honourable men, and do not play fast and loose with the drawings and specification after the quantities have been prepared.

4. It is usual for the surveyor to send the bills of quantities to each builder tendering, and not for him to send the bills, in bulk, to the architect, for him to distribute without the knowledge of the surveyor. This distinction will probably appear more important to a surveyor than to a lawyer, but as a surveyor I dislike this meddling of architects with bills of quantities, and I would keep the line between the surveyor and the architect as distinct as possible; and in the case of *Priestley v. Stone* great importance was evidently attached by the Court to the isolation of the surveyor, and as to all communications as to the quantities having taken place between the builder and the architect.

5. It is not usual, when tenders have been received and the amount is found to be too large, and the work has to be considerably reduced, for the architect and builder to cut and carve these reductions without the assistance of the surveyor who prepared the bills of quantities, using his results, but without the data on which those results were founded. If architects and builders will ignore the surveyor in duties strictly within his province, let them abstain afterwards from grumbling at the surveyor for blunders which they have made, but which they would throw upon the surveyor, who is in no sense answerable for them. These differences in the aggregate are certainly great, and if it had been desired to test the liability of a quantity-surveyor to a builder, under ordinary circumstances, for alleged short quantities, a worse case than that of *Priestley v. Stone* could scarcely have been found ; but as I have said before, the judgments go far beyond the case of *Priestley v. Stone*, they reach to ordinary cases.

To state the result in few words. In an ordinary case there is no contract between the builder and the quantity-surveyor, and therefore no liability on either side on contract. When this position is fully understood we cannot say how it will work ; my own opinion is that it will work badly both for the builder and for the surveyor. But let that pass for a little.

The judgment of the Court of Appeal in *Priestley v. Stone* has caused much disquietude in the building world. In the words of leading representative builders, "it has unsettled everything." This may not be strictly accurate, for the Judges have taught no new law, they have only made plain the old law, but in the opinion of the building world the unsettlement is complete, and that being the general opinion it amounts to practically the same thing as if some new legal regulation had come into force.

There may have been some judicious observations in the building journals as to this decision, but if so, I have missed seeing them. All that I have seen have been unsatisfactory, in some cases misleading and mischievous, and apparently written in ignorance of the real facts of the case. I have found such remarks as these:—"The judgment itself and "the reasons given for it appear so extraordinarily at variance "with the theoretic justice of the case, as it would present "itself to professional and business men engaged in the "practice of architecture and in the building trade, that it "is difficult for the non-legal mind to understand how that "can be good law which *in the general principle set up is* "*such manifest injustice*" (the italics are mine), and "what "we do think is that in this case the law, or its learned "interpreters, did not properly understand the facts before "them, and that an arbitrator who was an expert in "building would have understood them." The Judges and the counsel in the case agreed that there was no reported case which could be referred to as a precedent for this case, but the editor thinks he has found a precedent in a case of *Scargill v. Shoppee*, which is no precedent at all. The whole case is argued as if, notwithstanding the judgment, the "passing-over" theory had an indisputable basis, or, if it had not that indisputable basis, that it ought to have. There are plenty of carplings at the casual expressions of the MASTER OF THE ROLLS, while the fundamental teachings of L.J. LINDLEY and L.J. BOWEN are wholly ignored. The writer adopts a loose statement made to him by the plaintiffs that—"The judgment really "states that the builder is responsible for payment of surveyors' fees, while the surveyor is in no way responsible to "him for the accuracy of the quantities." The writer says:—"That appears to be the exact practical effect of

“ the judgment.” Who will teach this writer to distinguish between things which differ ? Another editor writes :—“ We still maintain that the decision is not in accordance with custom or with common sense.” It is not necessary to quote more of the misrepresentations as to this decision ; the main drift of the remarks was to lead up to a recommendation, “ that if parties to such (building) disputes would appoint a professional arbitrator who understands the subject they would be far more likely to get substantial justice all round than by taking the case before legal authorities who do not understand its real merits.” The views of the writer as to a professional arbitrator are peculiar, as in another place he writes of such an arbitrator as one “ whose hands are not tied by the law as those of a judge are.” From such arbitrators deliver me.

There has been far too much professional prejudice and self-satisfaction brought to bear upon the question of the appointment of professional arbitrators to decide all disputes as to building and surveying difficulties. Disputes in these matters may be broadly divided into two classes :—1. Disputes as to liability ; and 2. Disputes about technical details, and the measure of an admitted liability. In the first class, that of liability, a professional arbitrator, as such, knows nothing at all about it. It is a matter of pure, dry law which only those learned in the law should attempt to decide, and an architect or surveyor if asked to decide such a question of law should say, “ Excuse me, I am not a lawyer, such disputes are not within my province ” ; but in Class 2 where the question of liability does not arise, but where it is a question of the extent of the liability, then the subject is wholly unfit for a court of law, or indeed for a lawyer. A competent professional arbitrator is the proper tribunal, but take care that your arbitrator is

competent, that he brings a judicial mind to his work, that he will confine himself to his proper function, viz., to do justice between the parties. Let us not introduce false principles into arbitratorship; no ideas that an arbitrator may do what a judge may not do; no attempts to

“Wrest once the law to your authority,
To do a great right do a little wrong.”

Let us not have any ignoring of written contracts between the parties on the pretence that some wrong has been done to one of the parties who entered into the contract with his eyes open; if it is a question of such misrepresentation as to amount to fraud it is not a proper question for a professional arbitrator to decide; then with a competent arbitrator technical difficulties will present no obstacle, and he will, with patience, clear off the details and give a decision in accordance with the law and with the facts. *Priestley v. Stone* was a question—1st, of liability, and 2ndly, of details. The question of liability would have been wholly out of place before a professional arbitrator. That being settled there were no details for a professional man to arbitrate upon.

In conclusion, shall we ask, “What is to be done?” If, as the builders say, the situation is intolerable, we may be quite sure that it will not be long tolerable for quantity-surveyors. We cannot do without the builders, that is certain, and the builders would not better their position by attempting to do without the quantity-surveyors. In any attempted reconstruction of the system, let it be taken as an axiom that fairness to all the parties interested—the building-owner, the builder, and the surveyor—must be attained if things are to work without friction, and that is the object.

We can let the building-owner alone. He must be safe-

guarded throughout. He is the mainspring, and only mischief can result from impairing his position. What can the builders do to improve their position, and to obtain satisfaction and security?

They can do much for themselves without the intervention of the surveyors to help them. They can cease to be reckless in taking contracts improvidently, they can respectfully decline to tender from bills of quantities prepared by architects, or in their offices. I would not say that these architects' bills are never properly prepared; but, I may have been unfortunate, I have seen a good many such bills, but I never saw one which appeared to be satisfactory. The builders can also respectfully decline to tender from any bills of quantities when the invitation to tender contains any such notice as:—"The quantities are not guaranteed, the builder will be allowed to check them (at his own expense) before the signing of the contract; but no claims for errors in the quantities will be afterwards recognised."

Whether such a notice is put forward by H.M. Office of Works or by plain JOHN THOMAS, let builders simply decline to tender for any work on such conditions. Is it not a scandal that all these years the Association of Master Builders has never memorialised the First Commissioner of Works as to requiring builders to contract under such a condition as I have named? Is it so necessary that work should be tendered for under any conditions, that the leading builders allow H.M. First Commissioner to make such a clause a condition precedent to their obtaining a work, or do they not dare to tell him that they must decline to tender for any work for the Office of Works so long as such an absurd condition is imposed upon them?

Builders may also decline, as many of them now do decline, to enter into any contract in which the architect is

made arbitrator in the event of any dispute arising under the contract. They may also decline any contract where such a clause as Clause XI. in PRIESTLEY and GURNEY'S contract is introduced. Clauses of this kind are perfectly Protean in their appearances; they are often so disguised as not to be directly apparent, but they should be sought out, and when found absolutely rejected. Builders may also do much for themselves by discriminating between the good and the bad in bills of quantities. They should learn to read bills of quantities as they do any book or pamphlet they take up. If in a book they find errors in spelling, faulty grammatical construction, involved and obscure sentences, they lay down the book as unfit for their guidance. Bills of quantities can be read in the same manner as a book. A good bill of quantities runs intelligibly to an intelligent builder. It puts before him all the information he requires to enable him to make his estimate in a clear, precise, and methodical form. A bad bill of quantities is vague, loose, and disconnected. Just as experts can discriminate in works of art, in paintings, engravings, or sculpture, so should an expert builder discriminate bills of quantities, separate the wheat from the chaff, and if he finds the bills of the nature of "chaff" let him put them on one side as not fit to be tendered from, and let him tell those who asked him to tender the reason why he declines to do so. So long as bad bills of quantities are accepted by builders, almost as readily as good ones, and are tendered from almost as readily, so long will bad bills of quantities continue to be produced to the demoralisation of the profession, and to the pecuniary loss of the builders. This discrimination rests wholly and solely with the builders, and if they do not think fit to exercise it they must bear the consequences.

All these things which I have named the builders can do for themselves, and by so doing may materially improve their present position without touching upon the vexed questions of responsibility and liability. These questions of responsibility and liability being matters which affect, at least, two parties, the builders and the quantity-surveyors, cannot be settled by either party without the concurrence of the other, as the liability can only arise from a contract, agreement, or arrangement, between the two parties.

Of themselves the surveyors can do absolutely nothing without the builders, and as I have said these two parties combined must not do anything to impair the position of the building-owner. The builders and the surveyors should meet each other with mutual fairness, and with mutual wish to attain such a scheme as will satisfy the just rights and susceptibilities of each. The real interests of the parties are the same, however apparently antagonistic they may seem. Let them work together for a common end.

Such a scheme is not the work of a day, nor is it likely to be evolved from the brain of any single person, however earnest and disinterested he may be.

It is agreed on all sides that the existing state of things as to the responsibility and the liability of quantity-surveyors to the builders is unsatisfactory to both parties. Let both parties seek to improve it, not selfishly, but cordially. First come to a clear understanding as to what the present state of things really is. I do not think that there will be any insuperable difficulty as to that. Then consider what needs to be amended, and the best means of doing it. This is decidedly difficult, but because it is difficult shall it not be attempted? All our efforts may fail, but is that a sufficient reason for not using the best means available? No scheme

is likely to be successful which does not proceed from joint consultation and consideration. The architects are an important body; they are not directly interested in this question, but no scheme will work satisfactorily which has not their assent; and they may be taken, for the purpose of consultation, to represent the building-owners. The architects may be considered to have a representative body in the Royal Institute of British Architects. The builders are well organised, they have their representative Society in the Institute of Builders. Quantity-surveyors have their representative body in the Surveyors' Institution.

Let the secretaries of these institutions formally bring before the Councils of their respective bodies a notice that it is a general wish of all concerned that a conference should take place to consider the existing difficulties as to the liability of surveyors for bills of quantities, and that the architects, builders, and surveyors should be represented at this conference by a deputation of two members from each of the three representative bodies.

Let each Council select two competent members. Let these six selected men meet, and let them first of all agree in the selection of some one barrister or solicitor who has taken much interest in matters connected with building and surveying, but also shall not be officially connected with either of the three Institutes. Having agreed upon the fittest man of law, let them ask him to kindly come to their assistance and act as their assessor to keep them from the pitfalls of the law and to aid them with his technical knowledge. Then let these seven men consider the problem they have to solve, and it may be that after much patient thought and deliberation they may be able to devise such a scheme as shall meet with their general assent. If this is

done let them as a collective body, present their report to the Councils of the three Institutions. The Councils may then after consideration think the proposed scheme eminently suitable for general adoption. Will it be too much then to ask these Councils for once to coalesce in putting this scheme before the professions, the building trade, and the world, as their united views as to the course to be pursued in future ?

A scheme thus promulgated will command acceptance from the great majority of the professions and the trade, and if there should be any isolated cases of resistance, by surveyors or builders, to that which is thought to be for the benefit of all, let such be severely let alone. If there should be a general agreement for the acceptance of such a scheme, as there should be, the recalcitrants, if any, will not be long before they find their opposition untenable.

MR. HERBERT T. STEWARD (Fellow) had much pleasure in moving a vote of thanks to MR. JOSIAH HUNT for his very able and exhaustive Paper. The subject could not have been in better hands, and every member of the profession, personally interested in the subject, would recognise and appreciate the spirit in which MR. HUNT had approached it. He would not attempt to deal at that hour with any of the specific points mentioned by the author, but hoped to have an opportunity of doing so on the next occasion, when the discussion would be opened by his friend MR. WIDNELL, on whose behalf he begged to move the adjournment until the following Meeting.

MR. C. F. SELBY (Fellow) cordially endorsed all that MR. STEWARD had said with reference to MR. HUNT's ex-

cellent Paper, and had much pleasure in seconding the vote of thanks and motion of adjournment.

The vote of thanks having been put and carried unanimously, and briefly acknowledged by Mr. HUNT, the Meeting then adjourned.

AT
THE ORDINARY GENERAL MEETING,
Held on Monday, February 11th, 1889.

CHARLES J. SHOPPEE (VICE-PRESIDENT) IN THE CHAIR.

THE CHAIRMAN said it had been previously intimated that two of the Members mentioned in the Interim Report of the Royal Commission on the working of the Metropolitan Board of Works had resigned their connection with the Institution. He had now to announce that the membership of the third, whose case had been under the consideration of the Council, had been suspended for twelve months.

The deferred discussion on the Paper entitled "Quantity-Surveyors: their Duties, Rights, and Liabilities," read at the last Meeting by JOSIAH HUNT (Fellow), was opened by

Mr. F. G. WIDNELL (Fellow), who said that no doubt all the Members of the Institution would feel very much indebted to Mr. HUNT for his very able Paper. He himself concurred, generally, with Mr. HUNT's views. The author had sought, as he had stated, to represent things as they are and not as they might be, or, perhaps, ought to be, and, bearing this in mind, he (Mr. WIDNELL) would endeavour to deal with the subject from a practical rather than a legal point of view. He must, however, take a preliminary objection to the term "quantity-surveyors" employed in the Paper. Surely the practice of surveyors of the class he saw around him covered a very great deal more

than the mere preparation of quantities. It included the measurement of buildings, of railways, of docks, and he might even say, from his own personal practice, the measurement of *quasi* ships, for thus might be described the immense caissons used in the great dockyards to close the entrances to the various docks. It also included work of other and varying descriptions—light-and-air cases (which were now assuming such great importance), damage to adjoining buildings by new erections, and so on. Party-wall questions and many others also came under the observation of the building-surveyor. It must be remembered that surveyors existed before the introduction of quantities, or even of builders, as now known. Forty or fifty years ago it was the practice of each master artificer to carry out his own work in the erection of a building. There were the bricklayer, the plumber, the mason, the smith, and others, who employed workmen, many or few, and the joint labours of the whole produced the complete building. The surveyor was employed before the introduction of quantities; first of all by these separate tradesmen, where their affairs were of sufficient importance, in measuring up the work, and, afterwards, for a similar purpose, when the builder took into his own hands and executed all the various matters now included in the term “building works.”

The necessity for quantities, he thought, arose when it became the custom for the building-owner to employ a master builder, so called, and to require and receive a tender for the complete execution of the works upon which the contract was based, before the works themselves were commenced.

It might, perhaps, be well to more clearly define quantities. What were quantities? He assumed that when a building was projected on behalf of an employer, the architect prepared what was called a set of drawings. He indicated on paper, by means of colours and lines, the works

to be carried out, and, as it was impossible to describe everything by drawings so completely as to communicate the whole of his intentions to others, he wrote what was called a specification, *i.e.*, he described in writing the manner in which he wished the work executed, and the exact description of the materials he proposed to employ, with such general instructions as enabled the builder or surveyor to exactly understand his meaning, in order to carry out the design which he had made. But that was not enough. Obviously, in the drawings and the specification there was not included the whole of the information which would enable a builder to ascertain the cost of the work; and here came in the necessity for quantities. Now, what were they? He should define the bill of quantities as "a translation into "a schedule, in figures, of the quality and character of the "work which the architect had delineated on his drawings "and described in his specification." These quantities, clearly, had no effect whatever, if they were properly made, upon the cost of the work, for the duty of the surveyor, or whoever prepared them, was simply to put down, in the form he had mentioned, the prices and quantities of the works which were shown by those drawings and specification. He remembered, a few years ago, being asked by the Director of Works to the Admiralty, who had, apparently, heard it stated that the taking of quantities increased the cost of the building, or otherwise damaged the interests of the building-owner, if this were so. He explained, as carefully as he could, and as he was endeavouring to do on the present occasion, his idea of the position, with the result of showing the fallacy of such a conception of the facts.

He was obliged, again, to differ somewhat from Mr. HUNT when he said "quantities are prepared to enable the "building-owner to obtain estimates for the building which "he proposes to erect, which estimates he could not obtain

“from competent builders without such quantities,” (with that, he supposed, all would agree) but Mr. HUNT went on to say: “so that he may buy in the cheapest market, or obtain the work he requires for the least money”; and again, farther on: “quantities are only means to an end, that end being that the building-owner may obtain the work he requires for the least money, and for this end, and for this end only, are the bills of quantities prepared.” Now, he did not think that those two descriptions were quite happy. He quite agreed that the object of quantities was to facilitate the making of an estimate, but it often happened that the lowest tender was not accepted, being, for some very good reason, not the most eligible. Therefore he thought it hardly correct to say that the sole end of quantities was to get the work done for the least possible money.

He also disagreed with the dictum of the *Builder*, quoted at p. 134, viz.:—“We have always maintained, in spite of the prominence into which of late years this bogey of quantities has been brought, that the quantities are, in reality, the business of the contractor, *and of him alone.*” Surely that was not the case. The drawings were necessary, and the specification was necessary, in order to give a proper description of the manner and character of the work, and quantities were necessary, he maintained, in order to get at the cost of all. They could not be said to be the sole concern of the building-owner; but they were necessary to complete the work, to enable it to be tendered for, and afterwards to be carried out at a proper price. Again (as Mr. HUNT had pointed out), to say, as Lord COLERIDGE appeared to have said, that it was for the convenience of the builder that it was done, seemed to be to misapprehend the question, as very many did. Lord DENMAN, in one of his judgments, seemed to have appreciated it to some extent when he spoke of the employment of the quantity-surveyor by the building-

owner, who *must* have quantities taken out or he would not get tenders. There was, in this, no mention of the lowest cost. Then, as he had said, surveyors were employed originally by the separate tradesmen or workmen, and on the introduction of the monopoly system which brought in the modern builder or contractor, surveyors worked almost entirely for builders, who found, when a large number were called on to compete for a given work (and it was obvious that only one of the number could succeed), that it became very expensive and laborious for them to take out quantities each for himself, and they therefore adopted the practice of nominating one individual to represent the whole number. In the event of the contract going on and the work being executed, the surveyor was to be paid by the successful competitor. In the event of its not going on, they used, as a rule, so far as his experience went, to agree between themselves that each should pay a contribution towards the proper and reasonable fees of the surveyor who took out the quantities. But the situation had been gradually changed. For what reason he knew not, architects had, in most instances, assumed to themselves the right of appointing a surveyor without consultation with the builders at all, and he presumed it was the state of things which had thus grown up that led to the question now so prominent in connection with quantities.

Without dwelling, as he had said, too much on the legal aspect of the question, it was noticeable that in the three cases to which Mr. HUNT had referred, of *Scrivener v. Pask*, *Stevenson v. Watson*, and *Young v. Blake*, the architects prepared the quantities themselves. In all those three cases the plaintiff was the builder or the building firm. In the first case the action was brought against the building-owner, in the second against the architect, and in the third against the building-owner and the architect; but, as Mr.

HUNT had pointed out, in all three of these cases the actions had entirely failed. It had been reserved for the recent case of *Priestley v. Stone* for the action to be brought against the surveyor. No case appeared to have previously arisen where an action had been brought by a builder against a surveyor who was either appointed directly by himself, as one of the competing parties, or in whose appointment the builder had concurred; and he maintained that surveyors of repute had always acknowledged their moral responsibility, not only to their employer, but to the builder. That had been his own practice, and that of all surveyors with whom he had been brought in contact during a period of nearly 40 years.

A case had recently occurred to which he would refer. About a year ago he prepared the quantities for a new lunatic asylum at Plymouth. He worked under the instructions of the architect, and after the quantities were ready and had been sent down, an advertisement appeared in the *Builder* journal inviting tenders for the work. The Committee inserted in the advertisement the always most objectionable condition, that they did "not hold themselves responsible for the accuracy of the quantities, which must be verified by persons desirous of tendering." On having this advertisement brought to his notice he sent a letter for insertion in the same journal in the following terms:—

"IN RE QUANTITIES, PLYMOUTH BOROUGH ASYLUM.

"Sir,—Our attention has been drawn to an advertisement in the *Builder* of the 11th inst., inviting tenders for the above.

"This advertisement, which has been inserted without consultation with us, states that 'the Committee do not hold themselves responsible for the accuracy of the quan-

“tities, which must be verified by persons desirous of tendering.’

“May we be allowed to state that during a practice extending over more than thirty-five years, we have always held ourselves responsible for the accuracy of our quantities, as, surely, do all surveyors of repute?

“The notification that the quantities must be verified is most unreasonable; it is generally quite impossible for persons tendering in the short time which elapses between the issue of the quantities and the delivery of the tenders.

“WIDNELL & TROLLOPE.

“*Feb. 17, 1888.*”

He merely mentioned this case in justification of his assertion that all surveyors of repute and position held themselves morally responsible to the builder as well as to the employer. But of course this responsibility was a very different thing from legal liability. It must, moreover, be responsibility for the correctness of the quantities as a whole, and not for the accuracy of each specific item. It might, of course, be said that two wrongs do not make a right, and that it would be no answer to a man who accused you of having made a mistake to tell him that you were satisfied you had made another! But, on the other hand, the real question was whether the builder was damaged. Was he injured by the inaccuracy? If not, he contended that there was no claim, moral or legal. He himself, in taking out the quantities for a small work some six weeks ago, made a little blunder. Shortly afterwards his attention was drawn to it by the builder—a provincial man—who wrote saying that a considerable quantity of boarding had been omitted. He found this to be the case in regard to the boarding, making a difference of some eight squares.

But the builder went on to state that a quantity of ceiling-joists, 3 inches by 2 inches, had been omitted. When, however, he came to refer to this item he found that he had not only taken the ceiling-joists, but had taken them at 4 inches by $2\frac{1}{2}$ inches. In writing back he had therefore said, "I quite admit that I am liable to you for the " difference in the boarding, but be so good as to allow me " the difference for having taken the joists larger than were " used"—a claim which he (Mr. WIDNELL) thought perfectly fair and reasonable.

It appeared that all the decisions given in cases which had come before the Courts on this question had been based on the assumption that there was no privity between the surveyor and the builder. Now, while he demurred to the giving of a legal guarantee, he thought it might, perhaps, be possible to establish this privity without injury to any party, and to this end he would suggest the following method of overcoming the difficulty. Let the surveyor appointed by the architect, in the exercise of the latter's assumed right, write a letter to the builder somewhat in these terms:—"Sir, " I am directed by Mr. A (the architect) to ask if you will " be willing to tender for the erection of a house at C for " Mr. B (the owner). In order to assure my responsibility " to you as well as to Mr. B you are invited to concur in " my appointment to prepare the quantities." That seemed to be what was wanted—simply the establishment of that privity which would make a surveyor, guilty of negligence, really liable. Whether this was giving too much, or whether it was worthless, was, he thought, a lawyer's question; but it seemed to him that, if there were no objection to it from a legal point of view, it might aid the solution of this difficulty. That solution, whatever it be, must come about with the concurrence of the architect, and his opinion was very strong that the proper course to adopt would be a return to the old

ways, by letting the builder have a voice in the nomination of the surveyor, so that they should all be parties to the preparation of the quantities for the tender, and then there would be little difficulty in settling any questions which might arise. There seemed to be no quoted case of a builder having brought an action for errors in quantities against a surveyor so appointed.

It had been suggested that the remedy for the apparent difficulty was to make the quantities part of the contract. He could not himself think that this was a prudent course. He quite agreed with Mr. HUNT in what he said about the difficulty that would arise, and it seemed to him that such a course would be prejudicial to all three parties concerned: first of all, to the employer, for, as Mr. HUNT put it, he might be a man who for some good reason had only a certain sum of money to spend, and it would be very unfair to him, the tender having been accepted for the erection of a building at a cost of, say, £10,000, if on account of the quantities being part of the contract he should be saddled with an additional expenditure of, say, £2,000 or £5,000. He thought it would also be prejudicial to the surveyor by encouraging carelessness, and making his position difficult and awkward, and that in many cases it would be extremely unfair towards the builder, and would place him under conditions which he would gladly dispense with. He believed that the majority of high-class builders would not consider it a good way out of the difficulty.

With regard to the panacea which it was thought would set everything straight—the reference of all disputes arising to a professional arbitrator instead of an action in a court of law—he entirely agreed with Mr. HUNT's remarks on the two classes of differences that arose, viz., the technical question of liability and the question of measure of damage, and it seemed to him that

to try a question of legal liability before a surveyor was a mistake, and he himself always endeavoured to make the position easier, in cases where he was appointed arbitrator, by getting the assistance and advice of a legal assessor; but he agreed with Mr. HUNT that it was better to have the question of legal liability decided by a legal authority before the question of technical damage was submitted to a professional arbitrator.

Another question referred to in the Paper was an interesting one to surveyors, viz., whether the builder was entitled to demand a copy of the dimensions upon which the bills of quantities were based. His own practice had always been to tell the builder that he was not entitled to them, but, at the same time, to let him have them if he wanted them, writing on the front page, when he handed them in, a notice stating that they were the property of the surveyor, that they were lent to the builder for his information only, and were not to be given to his foremen, and were to be produced on settlement of the account if any question arose. This system had been found to work well. The largest building contract which, he supposed, was ever executed from quantities, viz., the Law Courts in the Strand, was based on quantities prepared by his firm in conjunction with Messrs. HUNT & STEWARD, and during the ten or twelve years the works were going on, they were constantly referred to. In consequence of this plan having been adopted, and of the fairness, integrity, and honour of the builders, no difficulty or injury to either party had ever arisen.

Mr. H. T. ASHBY (Visitor) said he should not attempt to criticise the criticisms of the last speaker, but would confine his remarks to a few points which he noted while reading this admirable Paper, for which, speaking as a

builder, he must express himself, on behalf of the trade, very much indebted to Mr. HUNT, more particularly as it seemed entirely a surveyor's view of the question, and as such was specially valuable to builders, who were anxious, on this very important question, to understand as clearly as possible the ideas of surveyors themselves. He could not imagine anybody doing more justice to this subject than Mr. HUNT had done. The transparent honesty of purpose displayed throughout the Paper must be evident to all, and even to those who were compelled to differ from its statements, the aim was so clear that they were obliged to differ with reluctance, and in the most friendly spirit.

He thought Mr. HUNT's chief aim was to settle, as far as possible, the responsibility of the surveyor to the building-owner, to the architect, and to the builder respectively; and as far as possible, to fix that responsibility on the building-owner. He considered this perfectly legitimate, because, while he still held that the responsibilities of the quantity-surveyor to the builder were very considerable indeed, it was certainly, according to the author's first general proposition, for the benefit of the building-owner. It was rather to be regretted that in endeavouring to enforce that proposition Mr. HUNT had attempted to prove somewhat too much, in seeming to controvert the dictum of Lord COLERIDGE that quantities were of great convenience to the builder. He did not think it was necessary for Mr. HUNT to prove that it was not so in order to prove his next point—that they were for the benefit of the building-owner. He (Mr. ASHBY) considered that the quantities were largely, if not primarily, for the convenience of the builder. The building-owner very seldom, if ever, saw the quantities, and the architect rarely saw them except in those cases where, at the close of the job, he chose to settle the extras and omissions without the intervention of the surveyor. There-

fore it seemed that the convenience of the builder was the first object of the quantities, and that it was right it should be so.

Then he observed that Mr. HUNT still further tried to strengthen his position by saying that in seeking work, *i.e.*, in submitting estimates, the builder was working for the benefit of the building-owner. He (Mr. ASHBY) ventured to think that the builder was doing nothing of the kind, but that he was working simply and solely for his own benefit in his own trade, trying to obtain work out of which he hoped to get a profit. The fundamental principle of this, as of all fair bargains, was that the buyer and seller should equally benefit; but the builder himself was working for himself alone. Now, as to the responsibility of the quantity-surveyor to the builder, he thought that the history of quantities, so far as he could trace it, tended to the conclusion that the quantity-surveyor was, in the first place, the creation of the builder; else why did the payment of the quantity-surveyor by the builder survive? Why was he not paid directly by the building-owner? It was, he thought, an instance of the habit which kept up old practices long after the original intention had passed away, and he could not help thinking that it was still the builder who indirectly employed the quantity-surveyor, though having now little or no choice in settling who should take out the quantities.

Now, on a second very careful perusal of the Paper, he was sorry to say that, instead of his mind being cleared and his views becoming more definite on this question, they had become more and more confused. This, he thought, was in no way the fault of the writer, but arose from the chaotic, the nebulous, he might almost say the invertebrate condition of things, and which must be intensely obnoxious to surveyors themselves.

If some definite status could be assumed by surveyors it

would be better for all parties, but at present the position was indefinite and unsatisfactory, and this was the reason, he thought, of the difficulties and inconveniences which had arisen and must still arise on this question. Why should there be so much doubt as to who employed the surveyor? He had been trying to think of some professional man or tradesman who held a similar position to that of the surveyor, but could find none. The physician was clearly responsible; the architect, the solicitor, and the barrister were all definitely employed by some one. The auctioneer was clearly employed by some one. One would suppose that if anyone could be done without it would be the auctioneer; but although a man was usually supposed to be capable of selling that which he possessed, yet the auctioneer's position was a most ancient and honourable one. Why was it so? It was because his position had been clearly and definitely marked and mapped out. If an auctioneer sold a plot of land as being 100 acres and it turned out to be only 90 acres, he was clearly responsible to the man to whom he sold. If he sold an old book which was supposed to have 500 leaves and it only had 499, he was responsible to the buyer of that book for an inaccurate description. In like manner he hoped the result of this debate would be a clear definition of the position of the quantity-surveyor, and who it was that employed him. He ventured to consider this was the centre round which all these questions and discussions turned.

It had been said that the matter was very much in the builder's hands. He was sorry to say that it was nothing of the kind. At one time the builder had the privilege, or the opportunity, of nominating the surveyor, but this was no longer so, and if respectable builders were to refuse to tender except on certain conditions, what would the result be? Those who were stiff-necked or stiff-backed enough to refuse to tender except on perfect quantities, would be left out in

the cold, and the trade would get more and more into the hands of irresponsible persons, whom he was sure the respectable architects and surveyors of London would not care to encourage. If this plan were adopted, the higher class of builders, who gave good value for money and stood out and fought against and endeavoured to avoid the heartburnings to which this question gave rise, would simply have the opportunity of not tendering at all! He repeated that it was far more a question for surveyors than for builders, but builders were anxious and earnest in their offer to co-operate with surveyors in any cases in which they might be concerned, in order, if possible, to lessen the uncertainty which existed in these matters.

Mr. T. M. RICKMAN (Fellow) said that the object of quantities was not so much a mere question of the desire of a builder to compile his estimate, or of a building-owner to get the work done cheaply, as it was to enable the building-owner to obtain genuine competition among builders. With regard to the statement that the position of the measuring-surveyor had no counterpart in any other profession, his own impression was that it was more analogous to that of a public accountant than any other. He did not agree with Mr. ASHBY that it corresponded with the position of an auctioneer. He thought that in the case cited, where an auctioneer sold, for 100 acres, what was really only 90 acres, the auctioneer would not have to pay for the 10 acres, but that the vendor would be responsible for the erroneous description of his auctioneer; and similarly in the case of quantities, the building-owner would be responsible for the quantities put forward by his measuring-surveyor.

There was one assumption running through Mr. HUNT's Paper with which he hardly agreed. Reference was made

from time to time to the responsibilities of the measuring-surveyor being dependent on the perfect accuracy of the drawings and specifications which the building-owner provided. There were cases, no doubt, in which a perfect set of drawings and specifications were handed to the quantity-surveyor to take his quantities from, and in such cases he could hardly believe that any responsible quantity-surveyor could make any serious error. The errors which occurred in the preparation of quantities (and there were such errors, greater or less, in every set of quantities) arose from the drawings not being perfect, from the specifications not being complete, from both being altered from time to time as the quantities were being prepared, from a larger amount of responsibility being thrown on the measuring-surveyor, and from there not being sufficient time allowed him, as was too often the case. What the quantity-surveyor wanted was a set of working drawings and a specification such as an engineer would send out; such as used to be furnished when he was in his articles—careful working drawings with complete details, so that no question would arise in the course of the works, everything being thoroughly described by the specification and provided for in the quantities. With such materials to work upon he could not understand any man of moderate education and fair knowledge of building construction making any serious mistake. He thought, therefore, that in order to arrive at the actual responsibility of the measuring-surveyor in each case the circumstances under which he prepared his quantities must be taken into account. The representations made by the measuring-surveyor in the quantities were what an independent mind would naturally draw from the information supplied, and if a competent quantity-surveyor had taken such and such things as being his idea of what was intended by the drawings and specifications, the quantities

made independently by him might well be made the basis of the contract, rather than drawings and a specification about which many questions could be raised.

In the four cases cited in the Paper in which quantities were prepared, and which were discussed with reference to the relation between the quantity-surveyor, the building-owner, and the builder, Mr. HUNT had endeavoured to establish a custom from the present state of affairs. Now, his own impression was that custom was a thing which had been made in time past, and that it was only after some considerable lapse of time, during which matters had been conducted in one invariable way, that a custom could be established. If one could wipe out everything that had taken place till eight or ten years ago, and start afresh with the custom of the present time universally recognised, then he could quite agree with all Mr. HUNT's conclusions, but scarcely otherwise. He thought that when this question came to be discussed publicly, the four cases referred to in the Paper would have to be considered in a somewhat different order. They were, first, where the quantity-surveyor was employed by the building-owner, and the works did not go on. Secondly, where the quantity-surveyor was not employed by the building-owner, and the works did not go on; and the assumption in Mr. HUNT's Paper was that, in this case, the architect was acquainted with the employment of a surveyor, but the building-owner was not. The third case was where the quantity-surveyor was employed by the building-owner, and the works went on; and the fourth case where the quantity-surveyor was not employed by the building-owner, and the works went on.

Now, in the first case, in the order in which Mr. HUNT had taken them, the quantity-surveyor had a strong claim on the building-owner, because he was directly employed by

him. Mr. HUNT's second case was, perhaps, the weakest, and the strength of a chain was only that of its weakest link. If any argument were to be derived from the consecutive order, one ought to begin with the last, and say that the first had a little more strength than the last. He considered that discussion of the four cases, in order to settle the question of the liability to pay for the quantities, would throw considerable light on another question intimately connected with it, namely, that of the responsibility of the quantity-surveyor for the accuracy of his quantities. He assumed that no honourable measuring-surveyor would doubt, for a moment, that he was responsible for those quantities which he prepared under circumstances which enabled him to give an accurate representation of the drawings and specification. He thought that in order to consider this question thoroughly, the four cases should be looked at in a different order.

But, first of all, he would take a case which was not included in these four, viz., where the quantity-surveyor was not employed by the building-owner or architect, and the work did not go on. How could the building-owner be here saddled with the expense? Is not the payment for the quantities part of the cost of the tender, and, if so, how is it arranged for? Originally the builder prepared his own estimate for the purposes of his tender. There were two processes necessary—the one the taking out the quantities, and the other applying the prices. The building-owner applied for tenders, and it was the custom—and he supposed that the system which was generally recognised a long time ago had practically become a custom in the business—that several builders would submit tenders and would each prepare his quantities. Thus the preparation of the quantities was part of the cost of the preparation of the tender. It was part, as a building-owner would assume, of the office expenditure of the builder,

and unless the building-owner, in asking for tenders, made some arrangement for payment in case the tenders were not accepted, the builder did not appear to have any claim, and the quantity-surveyor, whatever claim he might have on the builder, would have no claim on the building-owner.

The second case he would assume was where the quantity-surveyor was not employed by the building-owner but with the knowledge of the architect. This was Mr. HUNT's second case. The building-owner would here assume that he had only to pay his own architect, and would not suppose that he had to pay anyone else, but would still look on the preparation of the quantities as part of the builder's work in making out an estimate. He thought the doubts which Mr. HUNT threw on MOON's case, on page 140, rather strengthened that position. The third case was where the quantity-surveyor was not employed by the building-owner, and the works went on. This was Mr. HUNT's fourth case. In this connection he might say that, from his own experience, and from his father's or his grandfather's experience, the building-owner knew that it was the architect's practice to measure up the works. His (Mr. RICKMAN's) father (going back to 1820 or 1830) was paid his 5 per cent. as an architect, and also $2\frac{1}{2}$ per cent. by the tradesmen for measuring up, and it was generally understood that an architect measured up his own work and charged for it. He thought there was nothing in these cases to show that a building-owner might naturally expect to have to pay.

His fourth case was where the quantity-surveyor was nominated by the building-owner, and the works went on, but the quantity-surveyor was paid by the builder. This was the usual course. The reason for the change from the appointment of the quantity-surveyor by the builder to the quantity-surveyor being appointed by the architect, or by the client himself, was not far to seek. In the preparation of a

tender there were, as he had said, two separate things to be done, viz., the preparation of the quantities, and the pricing of them. The object of the building-owner was to insure a really genuine competition, for if there were no competition as formerly, when each builder prepared his own quantities, there was no inducement for the builder to find out how the work was to be done with the most moderate amount of material and workmanship, as well as at the least remunerative prices. He inferred that the object of the employment of a quantity-surveyor was to save trouble to the contractors, but contractors were not always first-rate men such as those present in that room to represent the builders. There were some of them who did not always act in the fairest manner, in whose case there was the danger that some stranger, in whose hands neither the architect nor the building-owner would place the fair calculation of the work, would get hold of them. It was, therefore, found most desirable in the building-owner's interest that the quantities should be prepared by some one nominated by him.

The fifth case he would take was where the quantity-surveyor was employed by the building-owner, and the works did not go on. There was no question that there was responsibility for payment here, because the quantity-surveyor was the direct representative of the building-owner. The building-owner, who, as in the last two cases, nominated the surveyor, recognised that part of his expense would be payment for the quantities. His impression was that the best course to be taken was to adhere to the present circumstances, and that it should be assented to that architects and clients were to nominate the quantity-surveyor. But let the custom to be pleaded be based upon the actual present circumstances of the case, and do not endeavour to bring into court a custom based upon circumstances which, to a great extent, did not now exist.

Another point he wished to say a few words upon was the question of making the quantities part of the contract. The assumption in Mr. HUNT's Paper was that if the quantities formed part of the contract, the quantity-surveyor would have to give way, and his position would be taken by the architect, or somebody nominated by him who was not, perhaps, of the standing of a quantity-surveyor, and that he would be professionally injured.

What he believed was required in order to clear up the difficulty of the present position, was this—a public recognition of the position of the quantity-surveyor. At present he was nobody—he was neither flesh, fish, nor fowl—he had no proper recognised authoritative position. He was abused on all sides, and he had to work very hard, as he would still, under any circumstances, have to do.

When quantities were furnished with the knowledge of the employer, they were representations put forward on his behalf, and should form part of the contract. As to quantities prepared in an architect's office, many of which were most objectionable in form and character, making these part of the contract would be a mistake, and he could quite understand the opposition which arose from the principal builders in London when this point was raised. They said, "We have no objection to the quantities forming part of the contract if we know who has prepared them!" The correction of casual errors was a very different thing from converting an intolerably bad set of quantities into one that would hold water.

Again, he maintained that the quantity-surveyor should be paid direct by the employer, and he had no doubt that this would come about.

He had already had the opportunity of discussing all these questions with a number of gentlemen of great experience and ability—real business men,—and the moment he explained to them what the circumstances were

under which quantities had been prepared in their behalf, and handed over to the builder, who had no voice in their preparation, they at once agreed in his view that the quantities should form part of the contract, and that the quantity-surveyor should be paid direct.

Mr. WM. WOODWARD (Professional Associate) thought that a perusal of Mr. HUNT's Paper, and the discussion that had ensued upon it, showed pretty clearly that there was very little to be said that was absolutely new on the subject of the business of a quantity-surveyor.

In his Paper Mr. HUNT had said that a quantity-surveyor should be able to make working drawings in order to secure that proper details of structure and safety were provided for, and it seemed that the reference to this fact or desideratum impressed at least one writer in a technical journal with the idea that such a knowledge would be an encroachment on the province of the architect; but there existed in the files of the same journal some remarks by a well-known architect, which said a great deal more about the carelessness of many architects in matters of detail than he himself would venture to charge them with. These observations, coming from such an authoritative source, went very far to justify Mr. HUNT's opinions as to the necessity for the possession by the quantity-surveyor of some amount of architectural knowledge and draughtsmanship.

On page 135 of the Paper Mr. HUNT said "that before a surveyor can establish a right to obtain payment for quantities there must have been a 'privity of contract';" but it seemed that before the proceedings in the case of *Priestley v. Stone* it was thoroughly understood that privity of contract between the quantity-surveyor and the builder existed. It was known perfectly well by the builder who supplied the quantities; the surveyor was accustomed to regard the builder as responsible for payment for those quantities, and there

was, consequently, to that extent, privity of contract between these parties. But the case of *Priestley v. Stone* had evidently misled many persons unfamiliar with the real state of things, and had even, as he ventured to think, misled Mr. HUNT himself.

With regard to payment when the building was abandoned, the case of *Schofield v. Barnardo* was perfectly clear. The surveyor sent in his charges, entered his action, and recovered the whole amount. The only ground of defence was that Dr. BARNARDO had confined his architect to a certain expenditure, and that expenditure had been exceeded. This case of *Schofield v. Barnardo* showed that when a building was abandoned the surveyor was entitled to recover, and had, in fact, recovered, from the building-owner.

As regarded the authority of the architect when the client wanted a tender, it had always been clearly understood, and moreover it was law, that if the client instructed the architect to make a design for a building, and also to obtain a tender, there was strictly an implied authority for the architect, without his saying another word to his client, to proceed to instruct a surveyor, and the building-owner became liable. That was shown in many law cases, and he need not, therefore, refer further to the point.

With regard to the shifting of the liability on which Mr. HUNT had enlarged to some extent, he thought that until the very misleading case of *Priestley v. Stone*, the shifting of liability was thoroughly understood, and was established in a case, of which, probably, Mr. HUNT had not heard, in which his friend Mr. SIDNEY YOUNG claimed against the building-owner. The contractor had failed, and payment of the surveyor's charges had not been made, and Mr. YOUNG sued the building-owner with the result that the Judge who tried the case said that the contract had shifted from the building-owner to the builder, and it was to the builder that application must be made for the payment of

his charges. This, to his mind, distinctly supported the custom, and showed that there was authority in law for the shifting of the contract. The case had not, he believed, been reported.

It was clear that the building-owner could not be called on to pay the surveyor's charges, which were inserted in the bill of quantities, if they had already been paid to the builder, and in that case it was the builder to whom the surveyor must look for payment. Surveyors well understood this, and it was the duty of the architect to put reasonable pressure on the builder to ensure payment to the surveyor.

As to the quantities being made part of the contract, it appeared to him to be a thoroughly fair proceeding, and he had never yet heard any substantial reason adduced against such a course being adopted. The fact of uncertainty on the part of the client had no weight, to his mind, for this reason: if a contract were signed for £4,000 and the client knew that it would not cost more, then he ventured to agree with Mr. HUNT that the quantities being made part of the contract would be of some moment; but was a contract for £4,000 or any other sum of money ever confined to the exact sum for which the tender was made? There was as much uncertainty in the present system as there would be under that proposed. He did not believe that there was a respectable surveyor in London who would make the slightest difference in the manner in which he took out the quantities, whether or not they were to be made part of the contract. Therefore the suggestion of a surveyor being loose in taking out quantities should have no weight whatever in this question.

He had had some experience of quantities being made part of the contract, and of other systems, and believing the former method to be perfectly fair, he had adopted it in the building of his own house. In judging of the advisability

of such a course the building-owner must remember that errors were always on one side, and there were both errors of excess and of deficiency, and he failed to see why the building-owner should pay for 25 rods excess of brickwork because the quantity-surveyor had by an error inserted it in the bill of quantities.

In conclusion, with regard to the guaranteeing of quantities, Mr. HUNT had, he thought, utterly misapprehended *Priestley's* case. It stood entirely on its own footing, and had no reference whatever to the ordinary practice of quantity-surveyors. In *Priestley v. Stone* the quantities were taken out from pencil sketches supplied by the architect. The builder knew nothing of the quantity-surveyor, and the variations were arranged between the architect and the builder without consultation with the surveyor, and there was, therefore, no privity of contract as regards the latter. It was equally obvious that the case had no bearing on what was understood to be the practice of quantity-surveyors, and the decision could not therefore be considered to have unsettled either the law or the custom in these matters. He thought, therefore, that the present uneasiness on the subject was groundless. The surveyors and the builders were thoroughly able to take care of themselves, and the architects had it in their power to set all vexed questions at rest by supplying proper drawings and specifications.

He thought there was no necessity to reopen this subject, either by a conference between the Societies interested or by any other means. The present position of things was, to his mind, quite satisfactory, and the case of *Priestley v. Stone* supplied no adequate reason whatever for making any variations either in the law or in the custom.

Mr. ALFRED EMDEN (Visitor) said he felt some diffidence in offering remarks on the Paper, because he could only look at the subject from a strictly legal point of view.

He had read the Paper of Mr. JOSIAH HUNT with great interest, because it raised, he thought, a question which at present was totally unsettled. He had listened with some curiosity, if he might say so, to the remarks of the last speaker, and he must say, though he regretted to do so, that he could scarcely agree with one word which fell from him. He (Mr. EMDEN) had taken some trouble to be present on this occasion, because he thought that the question under discussion was one of the greatest importance to surveyors, as well as to builders. The legal rights, duties, and liabilities of the employer, surveyor, and builder, when quantities were taken out without any express agreement for the purpose, were not at present decided by law.

Now, as far as the case of *Priestley v. Stone* was concerned, it was not comprised in the regular Reports, for the very good reason that it raised no new question to lawyers. *Priestley v. Stone* had served a very good turn as far as surveyors and builders were concerned, because it had shown them what had existed for many years past, and the danger under which they had been working. Now that the danger was known, litigation and disputes must be more frequent unless a remedy was found. The fact was that the position of surveyors, at the present moment, as far as quantities were concerned, was, in the absence of express agreement, one which it was not right they should occupy. They were practically employed by no one, they owed no duty to anyone, and had no rights against anyone from a legal point of view. The case of *Priestley v. Stone* simply decided the question of law—that there was no privity of contract, and no custom was proved. Of course, in this case there was no privity of contract. What privity of contract could there be? There was certainly none with the builders. Then, so far as regards the alleged custom, it had been shown in other cases that it was very doubtful whether there was such a custom, and, if there were, that it might be held to be unreasonable.

It was all very well to prove custom, but a custom would not hold good in law unless it was a reasonable one.

The theory of shifting contracts was a ridiculous one altogether, for, in law, there was no such thing as a shifting contract. A contract was made between two parties, and it was binding as between them. Other parties could only obtain any right under it by assignment, if the contract was one that could legally be assigned, or by devolution, where that was possible. He asserted this with confidence.

This subject had been treated by Mr. HUNT in a most logical way, if he might say so, by dividing the cases bearing upon it into four classes. He (Mr. EMDEN) could merely shortly indicate, at this time of the evening, what he considered to be the legal point involved in each of these classes, for it was no good to look at the question from any other point of view than a legal one. The question was, What was the legal position in the absence of express contract? and the discussion of this question, he understood to be the real reason of this Meeting. At present there was no such contract. Of course, if there were an express contract with the building-owner it would be very different, but he thought experience had shown that there was very rarely a contract between the surveyor and the building-owner.

The first case assumed was one "where the quantities are prepared by direction of an architect with the knowledge of the building-owner, and the building does not go on." This was simply a question of agency, or it might be one of acquiescence, but the question, in the absence of an express agreement, was, Did the architect act within the scope of his authority? If so, then the surveyor had his remedy against the building-owner. On the other hand, if the work was done by the surveyor and the employer acquiesced in it and ratified the employment, then, again, there would be a remedy, but not without.

Then, as to the second class, "Where the quantities are prepared without the knowledge of the employer, and the building does not go on." That resolved itself into a question whether the so-called custom existed if the building goes on, and, if it does not, what was the extent of the architect's employment. Then the third class was, "Where the quantities are prepared with the knowledge of the employer, and the building is carried out." That was, again, entirely a question of the alleged custom if the building is carried out—at least, so far as it could be proved. And, lastly, there was again the question of custom under the fourth class. But in order to clearly raise for discussion the present difficulty, he would assume a fifth class of case, in which the surveyor had taken out quantities with the knowledge of the building-owner, or without his knowledge, and the builder had accepted the tender and then refused to go on. Then what was the position? Has the contract shifted to the builder, and is the employer relieved from liability? He should say not, but the position of the parties was certainly most unsatisfactory. This case was a very difficult one, and, under such circumstances, the surveyor was left in a most unfortunate position. Architects, surveyors, and builders ought to look on the question from the legal point of view. *Priestley v. Stone* simply reminded them, as he had before stated, of the position they had been in for years. The parties interested should combine together to place surveyors in a position similar to that occupied by the members of other professions.

It was most anomalous that gentlemen trained like those he saw around him, with their experience, and doing such important work, should occupy such an undefined position. Moreover, no system could work satisfactorily to anyone where no legal right or duty or liability existed between the parties interested. The remedy was, to his mind,

a very simple one, and in their own hands—that is to say, in the hands of the three acknowledged Institutions. In the end, whatever the result of the work might be, the money eventually came out of the pocket of the building-owner, whether through the builder or not, and no one else paid for the quantities. Therefore the simple remedy was that there should be a contract between the building-owner, the architect, the surveyor, and the builder, in reference to the quantities. There was, of course, no time to enter into a consideration of the details now. If without such a contract, the position of the builder was also made an unjust one because he had to take the quantities, and had, practically, no remedy against anyone, a system which could not work well. The cases mentioned as to a right being obtained against the surveyor on the ground of fraud or misrepresentation in preparing the quantities were so seldom likely (if ever) to occur that they were not worth attending to in the present consideration. He supposed there had never been a case where the surveyor fraudulently prepared quantities to deceive. The matter to be solved was this. In the first place, the three Institutions after meeting together to settle the details, which should be very simple, ought to agree upon a proper form of contract for general use between the employer, the architect, the surveyor, and the builder, somewhat on the lines suggested by Mr. HUNT in his learned Paper. At this hour of the evening, and with the time at his disposal, he had been compelled to make his remarks very short, perhaps too short to be as clear as he wished.

On the motion of Mr. H. T. STEWARD (Fellow), the discussion was then adjourned to the next Meeting.

AT
THE ORDINARY GENERAL MEETING,
Held on Monday, February 25th, 1889.

CHARLES J. SHOPPEE (VICE-PRESIDENT) IN THE CHAIR.

The adjourned discussion on the Paper entitled "Quantity-Surveyors: their Duties, Rights, and Liabilities," read at the Ordinary General Meeting of January 28th, 1889, by JOSIAH HUNT (Fellow), was resumed by

Mr. H. T. STEWARD (Fellow), who desired to add his testimony to the skill and ability displayed by Mr. HUNT, as well as to the great labour and trouble which he had bestowed on the subject so admirably dealt with in the Paper. There were but a few points on which he differed from Mr. HUNT.

As to the question of the liability of the building-owner passing over, or shifting, to the builder on the builder signing the contract, it was a theory the justice of which he never could comprehend. The common-sense view of the matter seemed to him to be that if a surveyor were employed by a building-owner, the surveyor's rights should be against the building-owner, and if he were employed by the builder, his rights should be against the builder. A man's rights were something, as he understood it, over which he had control, and which could not be handed over without his concurrence or assent. He was very glad to hear so eminent an authority as Mr. EMDEN say that "the theory of shifting contracts was a ridiculous one altogether, for in law there was no such thing as a shifting contract." But it had been stated that it was a custom. From this, however, he

ventured to differ; in fact, until comparatively recent years such a custom had not even been heard of. The "custom" theory had apparently been built up to meet the changed condition of circumstances, but the distinction between those circumstances, which varied materially, had, he thought, been lost sight of. Thus, when bills of quantities first became necessary in consequence of the system of tendering, the surveyor was, as had been correctly stated by Mr. ASHBY, appointed or employed by the builder. Then, for reasons which he need not explain, the architect took to appointing a surveyor to act in concert with the surveyor appointed by the builder, and subsequently the architect, first in small matters and afterwards in nearly all cases, solely appointed the surveyor. It had been customary in all these cases for the surveyor to insert in the bills of quantities an item for his charges and expenses. Now, in the first instance, viz., when the surveyor was appointed by the builder, this was clearly as it should be; it was an item which went to make up the amount of the builder's tender. It was the builder who in this case employed the surveyor, and consequently had to pay him. But, in the case where the building-owner, or his agent, the architect, appointed the surveyor, he did not hesitate to say that it was clearly incorrect, and had been the cause of much trouble and misunderstanding, and it appeared to him that the theory of the liability shifting or passing over had been built up in order to evade this trouble. He could not but think that if the building-owner, in cases where he employed the surveyor, had paid the surveyor direct, as he undoubtedly ought to have done, the passing-over or shifting-liability theory would never have been evolved.

Then as to the actual relationship of the surveyor to the various parties interested, Mr. ASHBY had said that he could not call to mind any position analogous to that of a

surveyor in preparing a bill of quantities; but, if the position of a surveyor could be likened to that of any other professional man, the greatest resemblance would be found to that of a professional actuary or accountant who made calculations and put forward statements upon the good faith of which reversions, or whatever else it might be, were purchased, either privately, or in the open market. The accountant's position, under such circumstances, could, no doubt, be defined, and that of a surveyor must be very similar.

With regard to what had been called "the present condition of things," he ventured to think, notwithstanding the many statements to the contrary, that it was a question more for builders than surveyors. He could well understand that the present position of builders would be most unsatisfactory if they were compelled to tender from every bill of quantities that was sent in to them, particularly judging from some documents, or things, called bills of quantities, which came before him in the course of arbitration proceedings, and which had often caused him to wonder how any builder could tender from them. With such quantities, he might remark that the stringency of the conditions of the contracts appeared frequently to be in proportion to the looseness of the quantities; and, bearing this in mind, he had, as he had said, often felt surprised that a builder could have anything to do with such quantities, or sign such contracts.

Surely the remedy was not far to seek. Builders could and did discriminate between the good and bad, and he could not think that a builder would lose anything in the long run by being, as Mr. ASHBY called it, "stiff-necked or stiff-backed" enough to refuse to tender under such circumstances.

It had been further said by Mr. ASHBY that respectable

architects and surveyors would not care to encourage irresponsible builders—an opinion in which he (MR. STEWARD) heartily concurred. What, then, had a good builder to fear? If he did forego an opportunity of tendering for work under such conditions, he might be consoled by the reflection that had he obtained the contract he would, before he had completed the work, probably regret having been successful in getting it, for it was work under such conditions that always brought a builder into trouble.

Time would not permit of his dealing with the several suggestions that had been made for contracts, agreements, or legal guarantees, further than to remark that they all appeared to him to have one demerit—that of being rather one-sided, all “take” and no “give.” He was sure, speaking seriously, that the surveyors would be most willing to co-operate cordially with the builders in any reasonable way, in order to relieve them of their present troubles; but it seemed hardly reasonable, and indeed somewhat quixotic, for surveyors voluntarily to take upon themselves a liability beyond that now imposed by the law (viz., that every professional man should bring due skill and care to bear upon the execution of his work, failing which he is liable), and this while the builders were doing nothing to help themselves. It had been pointed out by MR. HUNT, in the latter part of his Paper, how builders could do a great deal to help themselves, and he (MR. STEWARD) could not but think that they had the cure for their troubles in their own hands, if they would but use it.

With regard to making the quantities part of the contract, it appeared to him that the arguments against doing so were conclusive; and one thing seemed certain—that it would not meet with the approval of the leading London builders. There were cases, like those mentioned by MR. RICKMAN, where the drawings were so unfinished or so

imperfect that it was difficult, if not impossible, for a surveyor to interpret the intentions of the architect. In such cases, his own practice had always been to make application to the architect, with the object of finding out what was really intended; and, failing to obtain that information, he had settled the details himself and put them on the drawings, or in the specification. There were many cases in which making the quantities part of the contract was the only proper course, but they were exceptional, and required exceptional treatment.

In the Paper, Mr. HUNT had put a question on a point of practice—"Is a builder entitled to demand a copy "of the dimensions?" He probably knew the custom of Mr. CHAS. STEPHENSON and his partner, the late Sir HY. HUNT, both of whom had a large experience in the early days of quantities. He (Mr. STEWARD) could not say what their view of the *rights* of builders might have been; probably they did not trouble much about that; but he knew that their practice was, when appointed by the builder, to give him a copy if he asked for it; but, in cases where they were appointed by the building-owner, not to give a copy of the dimensions to the builder, and such had also been his own practice during the thirty years that he had been in business.

Mr. L. J. MATON (Visitor) said the subject was one in which he had often been professionally concerned as representing the building-owner, but more frequently as representing the builder, or the quantity-surveyor, and he quite appreciated the unsatisfactory state of things as at present existing. The subject must be looked at from two points of view; first of all from that of the building-owner. It seemed that the building-owner usually instructed his architect to obtain a tender for the work he wished to have executed. He might, or might not, know

anything about the existence and the duties of a quantity-surveyor. The tender was obtained, and the owner then probably instructed his architect either to accept it or to get it reduced, at the same time having no personal knowledge of, and, in the majority of cases, not being brought at all into contact with, the quantity-surveyor. The employment of the latter was the business of the architect, who was the first person to call the quantity-surveyor into existence so far as the building-owner was concerned. The surveyor's charges were, in the usual way, included in the contract price, and were paid through the builder.

Now, it had been said that the building-owner must be protected, but he was not himself aware of any case where a claim had been made by the building-owner against the quantity-surveyor. He did not think such a case was likely to arise, because in most cases the architect was the person who had called in the quantity-surveyor; and if there had been some glaring error in the quantities which would militate against the building-owner's interests, there would be some way out of the difficulty found, other than by making a claim direct against the quantity-surveyor. So far as the builder was concerned it was, he thought, evident that the judgments of the Lords Justices clearly laid down that in no case under the existing practice could the builder recover from the quantity-surveyor for any errors. The case of *Priestley v. Stone* was based partly on the plea of misrepresentation on the lines of *Peek v. Derry* and other cases; but it was decided by the Lords Justices that the principle in those cases did not apply.

In what way, then, could a builder recover for negligence (for, probably, nothing but negligence entitled him to claim) from the quantity-surveyor? He ventured to think that no liability could be established unless there were some contract between the quantity-surveyor and the

builder, based on an actual written agreement between them, under which the surveyor acknowledged responsibility to the builder for the accuracy of his quantities, in consideration of the builder making himself personally liable to pay the charges for taking out the quantities, which, in the absence of such agreement, the surveyor must look to the building-owner to pay. Such a contract could of course only be made when the building contract was entered into. It was competent for the builder to say—as he thought the judgment of the Lords Justices showed :—“ I have had these
 “ documents put before me for the purpose of making my
 “ tender. I am much obliged to you for them, they may be
 “ accurate or not, at any rate I have used them, but my
 “ using them does not make me liable to pay your charges,
 “ and I have not here included any sum for them. If, Mr.
 “ Quantity-Surveyor, you wish me to pay your charges I am
 “ very willing to do so, provided that you undertake in
 “ writing that, in consideration of my agreeing to do this,
 “ the quantities which I have used, and which you know I
 “ have used, and which you meant me to use, are reasonably
 “ accurate.”

He (Mr. MATON) would not put it higher than “ reasonably accurate,” because, unless the inaccuracies were so great as to amount to negligence, he was very doubtful if there could be any liability. He understood Mr. WIDNELL to say that he saw no necessity for the legal liability of a quantity-surveyor ; but, as a professional man, he (Mr. MATON) hesitated to subscribe to that doctrine. A solicitor (not a counsel, he admitted)—but a solicitor, a doctor, and other professional men, were liable for their work, and legally liable, and he was rather surprised to hear a surveyor acknowledge a moral, while objecting to a legal, responsibility. The excellent letter which Mr. WIDNELL had written to the *Builder* referred in terms to the responsibility of “ quantity-surveyors of repute ;”

but he (Mr. MATON) ventured to think that repute had nothing to do with the case. Professional men were liable, whether they were men of repute or not ; while it was plain from Mr. WIDNELL's own statement that he recognised a moral responsibility, but not a legal one. Anything short of a legal responsibility was really worth very little, but he should be surprised to hear that a quantity-surveyor was not liable to somebody for the accuracy of that work, for which it was to be hoped he was reasonably and sufficiently paid. It seemed to him that the only way to meet the present difficulty was to have a direct and absolute contract between the surveyor and the builder. If the building-owner liked to join, so much the better, but, for his own part, he did not think that this need be insisted upon.

With regard to making the quantities part of the contract, he agreed with the last speaker that there would be objections to this course in many instances, although he was told that it was quite common in the country. If he were a building-owner, he would be inclined to say, " Why should " I make the quantities part of the contract ? I have paid " a professional man (or shall pay him in some way or " other) for taking out the quantities, and I do not see why " I should have it done again, or run the risk of having it " done again, and paying for it again." That would be his view as a building-owner. As for the builder, he might say, " No, I am content to take these quantities—the quantity- " surveyor is liable to me—he is a man of position and a " professional man, and if he will undertake that they are " reasonably accurate I shall be satisfied."

That seemed to him to dispose of the question, except that one further point was worthy of consideration where the quantity-surveyor was to be liable for the accuracy of the quantities, viz., that the documents from which those quantities were taken should be identified beyond question.

This would necessitate the drawings and the contract documents being certified as the basis on which the quantities were taken out, and for this purpose the quantity-surveyor should affix his initials, or in some way affirm that the contract documents were the documents from which alone the quantities were taken. This, he thought, was essential to the due protection of the building-owner, the builder, and especially the quantity-surveyor himself. He thought far less would be heard of these difficulties if there were some such rule adopted for defining the documents which were laid before the quantity-surveyor, for the purpose of taking off the quantities. Careful surveyors were in the habit of keeping, for their own protection, tracings of drawings supplied to them; but he saw no reason why the building-owner or the builder should not be entitled to a certificate from the quantity-surveyor, that the contract documents and drawings agreed in every respect with the quantities which were taken from them.

Mr. WILLIAM EVE (Fellow) observed that the author had appealed to the Bible to support some of his propositions, and he had been very forcibly reminded by this Paper and the subsequent discussion upon it of the passage which told how Demetrius, finding his craft likely to be imperilled, called his fellow-craftsmen together and proceeded to make a considerable uproar. He thought, inasmuch as "all Scripture was written for our learning," two lessons at least might be deduced from that incident. The one, to imitate the example of these Ephesians, who were represented to have made an uproar for two hours only, and not to have prolonged this discussion to so great a length; and the other, to avoid their great error of thinking less of the truth than of the jeopardy of their own craft. It appeared to be considered by too many of the speakers that the building-

owner existed solely for the benefit of the quantity-surveyor rather than that the quantity-surveyor was made for the good of the building-owner.

All the difficulties would be cured, and as far as he could see, no fresh difficulty would arise, if the quantities were made part of the contract, although he knew that a contrary opinion was held by many. He had ventured during the discussion on Mr. SAUNDERS' Paper, in April 1880, to use these words:—"Bills of quantities generally contained
 " an item of 'Lithography, &c.'—a description of so vague a
 " character as to open the door for any unscrupulous person
 " to seek an indirect and unlawful profit. He would give one
 " or two actual instances which would speak for themselves.
 " In the first case the moderate sum of £17 had been
 " charged under this head for 70 pages and 61 sketches; in
 " the next, £86 for 34 pages and no sketches; in another,
 " £40 for 34 pages and no sketches; and in another, £83
 " for 51 pages and 18 sketches. These cases needed no
 " comment.

" But other things crept in under the shelter of this item,
 " and in one case he found that upwards of £100 had been
 " charged in the quantities and handed over to the architect
 " for abortive plans not carried out.

" But the worse case he ever heard of was that of
 " adding 5 per cent. for 'privilege of tendering.' Every
 " quantity-surveyor of standing and respectability must feel
 " how desirable it was to render such practices as these im-
 " possible. The remedy was to let the building-owner (who,
 " as had been pointed out, ultimately paid the quantity-
 " surveyor) pay him directly, without the intervention of a
 " third party who has no interest in protecting him from an
 " unfair charge."

If this were not done, what would happen? If the surveyor was liable and the drawings were incomplete (and

most quantity-surveyors would agree that they were generally more or less so), what would the quantity-surveyor do? Was it not human nature, that a man who had to take out quantities, for the result of which he was liable, should choose, where he had a choice, the more expensive way of carrying out the work? On the other hand, if he took them out and charged a smaller percentage in respect of them and was not responsible, the building-owner was very much safer, and everybody got his deserts. The only objection that he ever heard advanced to the quantities being made a portion of the contract, was that the building-owner did not know what he was going to spend. Happy building-owner who ever did! But was it not a fact which it was of no use to shut one's eyes to that the extras on a building contract were incomparably larger, taking the average, than any inaccuracies in taking out the quantities would be? This being so, it seemed to him absurd to assign as a reason against quantities forming part of the contract that the building-owner would not know how much he had to spend. If the building-owner wanted his work done cheaply, he would have it so done by making the quantities part of the contract, for they would then be taken out on a fair basis in the absence of any inducement to take them "full." Of course, if the quantities were taken out after all the details were prepared, it would be a different thing.

He hoped, therefore, that this discussion would lead to the quantities being almost invariably made part of the contract, and, to go a step further, to the building-owner being always acquainted directly with what he was to pay for. If the owner had to make the quantities part of the contract, he would take care to see those quantities, and would see the amount charged for taking them out. Whether he paid directly or indirectly did not matter so long as he and the builder both signed the contract. The building-

owner would then know exactly what he had to pay for, and if there were inaccuracies on the one side or the other they could be easily adjusted. He hoped this question, which had been before the Institution on and off for some ten years, would be brought to a satisfactory solution, and he believed, with the utmost respect for those who thought differently, that if surveyors were not afraid to let the building-owner know exactly what he was to pay for, but would tell him definitely what were his liabilities, the solution of the difficulty would not be far off.

Mr. SIDNEY YOUNG (Visitor) said that he had read the Paper, and the discussion which followed, with considerable care, and had given much attention to the question, and, in common with many other quantity-surveyors, he thought it a matter for regret that this commotion as to quantities had been raised at all. For many years the practice, as at present carried on in London, had, on the whole, worked very well. There had been some few questions of grievance, but, considering the thousands of estimates that had been prepared, the number of cases of difficulty that had arisen represented an infinitesimally small percentage. This case of *Priestley v. Stone*, which was the origin of the present commotion, was, he thought, a case of misfortune. It was, as Mr. HUNT had said, an entirely exceptional case, and was a matter which, for the honour of the architectural profession, was not likely to occur again for a long time. MESSRS. PRIESTLEY and GURNEY had the sympathy of all right-thinking men for the loss they had sustained, but, at the same time a great wrong would have been done had the verdict been against STONE. Mr. STONE prepared quantities for a building which might be called A. Those quantities were shown to the builder as quantities for a building which might be called B. The action by MESSRS. PRIESTLEY and

GURNEY was, he thought, brought against the wrong person, and it was probably pretty clear to most minds against whom it should have been brought. Therefore, although, with all respect, he did not agree with the reasons given by Mr. Justice STEPHEN (and affirmed in the Court of Appeal) in finding for STONE, he thought that STONE had, in a roundabout manner, come by his rights.

Throughout his Paper Mr. HUNT had marshalled his maxims and his classes and cases in a manner worthy of a skilful counsel, and his arguments were nearly as sound as the foundation on which he had built them. But there were two theories which underlay the whole of Mr. HUNT's Paper and permeated it from beginning to end. The first was, that the quantity-surveyor was not liable to the builder; and the second, that the building-owner was liable to the quantity-surveyor. It was true that Mr. HUNT had excepted the liability of the building-owner to the surveyor in cases where to his (Mr. YOUNG's) mind his liability was undoubted. Doubt was thrown on the building-owner's liability in cases which ran on all-fours with that of *Moon v. The Witney Union*. That was a very well-known case which had been tried over and over again. There were many cases in which the surveyors had recovered, but in none of them had the building-owner had the courage to appeal. He thought, therefore, that the liability of the building-owner to the quantity-surveyor in cases such as where a tender had not been accepted was undeniable and undisputed.

The late Mr. FRANCIS TURNER, who was so well known as an Associate of this Institution and a gentleman in very large practice in building and quantity cases, had said in a Paper read at this Institution some few years ago:—"At " this point then, the quantity-surveyor is working for a " principal whom he has never seen, who is probably

“ ignorant of his name, and has the mistiest possible notion
 “ of his calling. Yet, at this stage, the quantity-surveyor
 “ is on his firmest vantage ground. He has done his work
 “ for a known and responsible employer, who may abandon
 “ his scheme, and put the bills of quantities in the fire. If
 “ he does so, the quantity-surveyor is in clover, and the
 “ building-owner’s liability is undeniable. This was decided
 “ in 1837, in the well-known case of *Moon v. The Guardians*
 “ *of the Witney Union*,”* and he then went on to quote
 that case, which, as he said, was within the experience of
 all present. He thought the very fact of this case not being
 appealed against, and so many building-owners having
 paid without resistance, showed that the law was established
 on the point.

But Mr. HUNT had laid down one maxim on which he
 built a great deal, “that in all the cases which we shall
 “ consider the quantities are prepared for the building-owner.”
 That was the foundation of his argument; but with a bad
 foundation, however soundly one might build upon it, frac-
 tures and settlements would occur, and he (Mr. YOUNG) could
 not but think the statement that quantities were prepared for
 the building-owner, and the building-owner only, a bad
 foundation on which to build an argument. On the other
 hand, the *Builder* journal had declared, in reviewing Mr.
 HUNT’s Paper, that quantities were prepared solely for the
 benefit of the builder. He could accept neither statement, but
 held that quantities were prepared for the benefit of *both*
 parties. In the first instance, for that of the building-owner,
 who could not otherwise know how much he was about to
 spend, and would also be cut off from the benefit of competi-
 tion. On the other hand, quantities were of immense service
 to builders who had to tender for several works at one

* 3 Bingham, New Cases, 814.

time, which would be impossible without the aid of them. The quantities were also of the greatest use to the builder all through the work; they were his guide throughout, and when he came to the end—to the settlement of extras and omissions—the quantities were of use both to the building-owner and to the builder. Therefore he maintained that both Mr. HUNT and the *Builder* journal were mistaken, and that the truth lay midway between their two extremes.

On page 135 Mr. HUNT said:—"If the surveyor has a right against the building-owner he is liable to the building-owner if he is guilty of negligence, and conversely, if the building-owner can recover against the surveyor for negligence he is liable to the surveyor for payment for the quantities." All this depended on the word "if." How could a building-owner sue a surveyor for quantities if he had not paid him his surveyor's charges? The builder paid those charges, and he (Mr. YOUNG) did not see how the building-owner imposed any duty on the surveyor. At page 144, Mr. HUNT quoted Mr. CATES' "Decalogue":—"On the acceptance of a *bonâ-fide* tender, the liability to the surveyor shifts from the client to the builder; the surveyor accepts the builder as responsible to him, and his right of claim against the client ceases,"—and also said that that doctrine was endorsed by JENKINS & RAYMOND in their very useful book. Mr. HUNT treated Mr. CATES' "Decalogue" as of small importance, but he thought that it contained sound sense, and was certainly in accordance with the practice in most cases. It was, further said by Mr. HUNT:—"When was any contract entered into between the surveyor and the builder so as to make the builder liable to pay the surveyor?" He (Mr. YOUNG) thought such a contract was entered into at the time the contract with the building-owner was signed. The custom was established in thousands of cases. He himself had sued

a builder for charges and recovered them; but if he had sued the building-owner he would have lost. Therefore it seemed that the law recognised privity of contract between the surveyor and builder. It was certain that if there was no liability on the part of the builder to pay the quantity-surveyor, the plea of non-liability would be often set up, and he (Mr. YOUNG) had never yet heard of such a plea.

Farther on Mr. HUNT said :—"The employer wishes to " know the extent of his liability for the whole work and " not to make separate payments to builder and surveyor, " and probably other people, and he has the amounts which " will become due to the whole included in one sum." The surveyor's charges were, in fact, part of the work which was necessary for the completion of the building. The building-owner wanted to know how much a building would cost him, and perhaps he employed one man to do the heating, another man the concrete floor, and so on. All these were incidental items in the erection of the building, and so were the surveyor's charges, and the employer made a contract with the builder that included all these charges and handed them all over to the builder, who must pay them.

Then a little farther on Mr. HUNT said he expected to hear his views controverted, that all the text-books were against him, and that the judges did not understand such a thing as a shifting contract. A case in which he (Mr. YOUNG) was concerned, and which he took to the Court of Appeal some few years ago, had been referred to in the discussion. It was an ordinary case. The architect instructed him (Mr. YOUNG) to take out quantities. The tender came in. The builder whose contract was the lowest had, by an accident, not included the surveyor's charges, and he pointed this out to the building-owner. The building-owner saw at once that it was a *bonâ-fide* omission on his part,

and allowed the charges to be added, the tender being still the lowest. Thereupon a contract was entered into and the work went on. The architect did not include the surveyor's charges in the first certificate, at the express request of the building-owner, who said he did not want a large amount in the first certificate. Then the builder failed. He (Mr. YOUNG) made application to the builder for his charges, but was told he had not got them. He then consulted Mr. FRANCIS TURNER, who said, "I regret I cannot advise Mr. YOUNG to proceed with the action," and further said if he (Mr. YOUNG) could produce evidence of custom to show that if the building-owner had purposely left out the charges, or had instructed the architect to leave the charges out of the certificate, he might possibly recover, but he thought it a very doubtful case. He gave him, however, some encouragement, the case was proceeded with, and was heard before Mr. Justice FIELD without a jury. He (Mr. YOUNG) had now before him Mr. Justice FIELD's judgment, which, although it was against him, he was convinced was sound and right. It was as follows:—"I am very clearly of opinion that this case fails. I thought so yesterday, and I think so still more to-day.

"This is an action to recover the sum of £86, which the plaintiff alleges is the fair value of his work and services as a quantity-surveyor, and he brings the action, not against the builder, but against Dr. SMITH, whom I will call shortly the employer.

"In order to prove that contract he must prove, in the ordinary way, that he was employed by Dr. SMITH, either personally or by means of some authorised agent, to do the work in question, upon the terms that Dr. SMITH would pay him the fair value of his work. He has got to make out that contract, otherwise he fails.

"Now, what does he prove? He proves that Dr.

“ SMITH was about to build a house, and that he had
 “ adopted a course very common in these cases.

“ The architect says, ‘ Let builders come in and say
 “ ‘ what they will do it for.’ Of course, the employer says,
 “ ‘ How are the builders to know what they are to do?
 “ ‘ Looking at the plans will not tell them.’ Then there
 “ must be somebody to take out the quantities—that is, to
 “ say how much wood and timber and excavation and
 “ everything else is required, and then those quantities and
 “ the specification will indicate to anybody’s mind what the
 “ price they can afford to do it for is. Upon that the plans
 “ and specification are placed in the hands of the quantity-
 “ surveyor. They are very able gentlemen, and they do a
 “ very large business, and, I hope, make very large profits
 “ when they are successful, but sometimes, like every other
 “ profession, I suppose they have losses.

“ What is the contract made with the quantity-surveyor?
 “ I take it to be very clear that the contract is this, ‘ I am
 “ ‘ going to build a house,’ says Dr. SMITH, ‘ and I am
 “ ‘ going to put it up for tender; that is, I am going to let
 “ ‘ the trade tender, or certain named people’ (because,
 “ generally speaking, the tenders are invited from certain
 “ builders selected by the architect). He says, ‘ I am going
 “ ‘ to ask if they will tender upon your quantities, and what
 “ ‘ sum they will ask to have this work done for.’ If it is
 “ put up to tender, and if there is a successful competitor
 “ who enters into a contract, what happens? The employer
 “ says, ‘ It is not intended that I shall pay you, but that
 “ ‘ the successful person shall pay you’ (the builder I will
 “ call him), that is the contract made with the employer—
 “ I am putting it as the employer now, irrespective of the
 “ case that was cited in the course of the argument. The
 “ contract is not a contract for payment, it is a contract
 “ that ‘ I will go on regularly in course to obtain a con-

“ ‘ tractor, who by his contract shall not only contract that
 “ ‘ he will build the house, but shall also enter into an
 “ ‘ implied contract with you, the quantity-surveyor, that
 “ ‘ if I will add to the sum mentioned in the contract
 “ ‘ the sum due to you, he, the builder, will pay you.’
 “ That is the conditional contract. Therefore, if things
 “ take their ordinary course, that contract becomes completed
 “ by the course of conduct. What was the course here?
 “ Mr. YOUNG did his work, and I have no doubt he did it
 “ very well, and it went to tender. Mr. COOKE, a builder,
 “ makes a tender and thereupon a contract is made—I
 “ forget the exact date of it—and Mr. COOKE adding as he
 “ does the amount due to Mr. YOUNG in respect of his
 “ quantities to the amount, a contract under seal is executed,
 “ by which, with the knowledge of YOUNG and upon the
 “ custom or usage of the case, the employer, instead of paying
 “ Mr. YOUNG or making any engagement with Mr. YOUNG
 “ to pay him for his services, engages and contracts with the
 “ builder that he will pay him for these services. There-
 “ upon, according to the usage as proved to-day, there is a
 “ new contract made, an A.B.C. contract, which entirely
 “ gets rid of and destroys the old contract. No doubt that
 “ is what happened in this case. In this case everything
 “ went on in the ordinary way ; the contract was made, the
 “ architect certified up to a certain sum, but in the month of
 “ May, or earlier, the builder became embarrassed—some-
 “ times builders do get embarrassed.” (The learned Judge
 then referred to the stopping of the building-works and the
 rescinding of COOKE’s contract with SMITH.) “ The evidence
 “ shows, I think, that up to this time Mr. YOUNG had never
 “ made any application whatever to the defendant SMITH,
 “ but had applied to the builder for payment, and the builder
 “ had said, ‘ I cannot pay you because the architect has
 “ ‘ not included any sum for quantities in my certificate.’

“ Thereupon, Mr. YOUNG waited. The question to-day is
 “ whether he has any right of action against Dr. SMITH.
 “ I say there has been no contract here by Dr. SMITH to
 “ pay. I do not adopt the language we heard of yesterday
 “ about ‘shifting liabilities.’ ” (Plaintiff’s counsel had urged
 that the builder having failed to pay the surveyor’s charges
 the liability to pay them had shifted back to the employer.)

“ There never was any contract here which Dr. SMITH
 “ has broken. The contract was, ‘I will go on and will
 “ ‘employ a contractor to build this house at such sum as I
 “ ‘think reasonable.’ He did employ a contractor who
 “ went on and ultimately made default. Then Mr. TURNER
 “ grounds himself upon the authority, or the supposed
 “ authority, of *Moon v. The Witney Union*. But that case
 “ does not carry him any distance at all. In that case the
 “ employer had *failed in his conditional contract*.” (It would
 be seen that Mr. Justice FIELD upheld *Moon v. The*
Witney Union.) “ He had not got a builder at all, he had
 “ got no one. Therefore the true view of *Moon v. The*
Witney Union, so far as it does not depend upon the
 “ particular facts of the case, and so far as it is a principle at
 “ all, is in accordance with the conclusion at which I have
 “ arrived. The misfortune of Mr. YOUNG no doubt is that
 “ the architect did not think it right to include in the
 “ certificate anything for quantities. That is not the affair
 “ of Dr. SMITH. According to Mr. YOUNG’s very fair and
 “ good evidence, the architect exercised his discretion
 “ according to his best judgment, and Dr. SMITH is not
 “ liable for that in any shape or way. I have therefore
 “ not the slightest hesitation in saying (although I regret it
 “ for Mr. YOUNG’s sake, because he cannot make Dr. SMITH
 “ liable) that I nonsuit him.”

With that Mr. FRANCIS TURNER was kind enough
 to say that he thought it a very hard case, and did

what counsel very seldom do—returned the fees, and said that if he went to the Court of Appeal he would do the same if he lost. The case went to the Court of Appeal, and on the 27th May, 1880, was heard before Lords Justices BRAMWELL, BAGGALLAY, and BRETT, who, without calling on the counsel for the defendant, dismissed the appeal with costs. That, he thought, was a very good answer to Mr. HUNT's theory, that in the event of a man being handed over to a bankrupt builder, the building-owner was liable, and it clearly showed that, after signing the contract, nobody but the builder was liable to the surveyor for his charges, and it was difficult to see how, if builders were liable to quantity-surveyors for payment of their charges, quantity-surveyors could be exempt from their liability to builders for the accuracy of their quantities. He would not go into the question of making the quantities part of the contract, but might say that he agreed almost entirely with Mr. HUNT in what he said on the point. He thought that only in very exceptional cases should this course be adopted, as he believed it would lead to very great laxity in the taking out of quantities, that any incompetent person might call himself a quantity-surveyor, and that the building-owner would find he would not only have to pay for quantities, but for the work being measured up at the end, and there would be dissatisfaction all round. He strongly objected, therefore, to the quantities being made part of the contract.

It had been said that no such thing was known as an action by a building-owner against a quantity-surveyor for errors in quantities, but the case of *Scargill v. Shoppee* had been referred to incidentally in the Paper. In that case an action had been brought against the quantity-surveyor, and in which he himself was, unfortunately, concerned, for about four years, as one of the defendants. SCARGILL was the

building-owner, and SHOPPEE was the son of their esteemed Chairman, and he (Mr. YOUNG) was his partner in the matter. They had taken out the quantities for a house on the instructions of an architect, and after the tender was accepted a disagreement ensued between a certain person and the defendants. Thereupon the building-owner was informed that their quantities were grossly in excess, and he ordered the builder not to pay their charges. They applied to the builder for payment, but he refused on the ground that the building-owner had told him that if he paid them, he (the building-owner) would not pay him. They issued a writ for their charges, and the building-owner defended the action; he had already brought an action against them, in which he alleged that the quantities were *excessive*. They also brought an action against the builder, who alleged that the quantities were *short*, and that was why he did not pay their charges. However, they recovered their debt and costs against the builder, and the building-owner sent a cheque for the amount. Their solicitor was too wise to take this cheque, and they ultimately received the money in bank notes, and sent the builder his receipt. This case was also heard before Mr. Justice FIELD, but it was of such a complicated nature that neither he nor the counsel engaged cared to go on with it, and it was referred to the late Mr. I'ANSON. They pleaded to the action of the plaintiff that there was no privity of contract between them—that they were paid by the builder. Secondly, they pleaded that the quantities were part of the contract. They insisted on having them made so, on account of the looseness of the drawings. And, thirdly, they pleaded that their quantities were correct. That case, unfortunately, was never reported, but it was decided by Mr. I'ANSON. On what grounds Mr. I'ANSON decided it—whether, on the first two grounds, he did not know; but he knew, as a matter of fact,

that one of the grounds was the absolute accuracy of the quantities, and that Mr. I'ANSON had the quantities taken out by his own surveyor, who certified that they were correct. This was the only case he had ever heard of where an action was brought by a building-owner against a quantity-surveyor.

He would only say, in conclusion, that he considered the best thing to be done was to leave matters entirely as they stood at present. He had never before heard it denied by any surveyor of repute that he was liable for his quantities, and no builder of repute denied that he had to pay the surveyor for his quantities. There were a few exceptional cases like *Priestley v. Stone*, and one or two others; but he did not think, on the whole, that they were of sufficient importance to disturb the relations between the building-owner, the builder, and the quantity-surveyor which now existed.

Mr. C. B. ARDING (Fellow) was afraid he was in the minority with regard to making the quantities part of the contract. He thought it a very fair and reasonable thing to do. It was fair to the builder, and, in his experience, builders were quite content with such an arrangement. It was also fair to the employer, and it was very convenient to be able to refer to the quantities in case of variations. Again, he thought it was a very common practice for builders to ask to have an arbitrator appointed; to this there could be no objection, and it gave the architect and the builder more confidence in each other. Thirdly, he thought it should be generally recognised that in large works a second surveyor should be appointed by the builders. This system was not entirely obsolete, and he was rather surprised that builders had not taken steps to urge a return to it in the case of the building departments of the Government, and of all building bodies such as School Boards, in whose advertisements it was constantly stated that quantities

would be supplied, but that builders must check them for themselves before signing the contract, which was simply impossible. The Government departments formerly allowed a second surveyor to be appointed for large works, and he thought this should be done at the present time.

It had been objected that making the quantities part of the contract might demoralise the surveyor, but he did not think that the surveyors would jeopardise their reputation by deliberately furnishing inaccurate quantities.

With regard to the payment of the surveyor direct by the employer, he knew a case of that kind some little time ago in which the employer had agreed to pay direct, but, as he shortly after failed, the surveyors got nothing.

Mr. H. H. BARTLETT (Visitor) said he thought the views of both sides, on the subject of Mr. HUNT's Paper, had been very fairly ventilated. He gathered from the discussion that, as the world grew older, so it grew in iniquity, and it was necessary to be constantly making new laws to provide against new circumstances which seemed to crop up continually. The main object of this discussion had been, he supposed, to find some protection for both sides, and not for one only, against dishonest intentions. He did not himself approve of making the quantities a portion of the contract. He did not think it would work well, especially for the surveyor (not quite in the way that Mr. ARDING had put it, that it would demoralise the surveyor), for it would call into being a class of men without practice, without knowledge, and without any responsibility at all, who would dub themselves surveyors, and offer to take out quantities at any price so as to get the work. If that were the result to surveyors, it would also be injurious to builders, who would have inferior and less reliable quantities to estimate from.

Surveyors, he supposed, like the members of most other professions, might be divided into three classes—those who, in doing their work honestly, shirked no responsibilities and wished to be paid fairly for it; a second class, who also wished to carry out their duties, but only so long as it was not inconvenient to them to do so, and, in whose mind, when matters pressed them personally the question would arise, “Why should I make myself responsible for a thing out of which I personally get no benefit? If I make a mistake and take the quantities short I get no benefit, and the building-owner gets something for which he has not paid. I did not wilfully make the error, and therefore I will shirk the responsibility.” That was one of the classes which it was necessary to legislate against.

The third class comprised the utterly irresponsible men to be met with in all trades and callings, and who boldly asserted that they accepted no responsibility at all. They did not profess to do their work in a particularly good way; they were called in to do certain things, and they did them, it might be in a good way, or not,—and they asserted the manner of doing them was no concern of anyone else. That men of this class existed he well knew from his experience as a builder. He agreed with Mr. SIDNEY YOUNG in regarding the quantities as the guide of the builder throughout, and he knew of no greater pleasure to a man who understood his work than to sit down to a well-prepared bill of quantities. It was a work of art, because it was perfect of its kind, and was so arranged and described that in running through the items there was no difficulty in at once assigning a proper value to them. Such work was a credit to anybody, and he was very glad to say that a very great deal of it came in his way. For such conscientious work no legislation was required, and there could be only one feeling, namely, that of respect for men

who carried out their duties so thoroughly. But, as he said just now, there were certain men who would not take trouble about quantities, and it was generally with these men that difficulties arose. Speaking from his own experience, he had had no personal difficulty with surveyors in carrying out works under the present system, and he did not anticipate any difficulty in the future if architects and surveyors were kept quite separate from each other in their work; but when architects took out their own quantities the work was seldom properly done, and if such quantities were made part of the contract it was necessary for the builder to take them out himself and see that they were checked. Only last week quantities for an important engineering work were sent in to him and he was invited to tender, one condition being that he was allowed four days to check the quantities to see if they were correct before sending in his tender, the whole onus being thus thrown on the builder and the quantities made no part of the contract, although a good charge was put down at the end for taking out those quantities.

Referring to what had been said on the subject of responsibility, he had not heard a single surveyor throughout the discussion say that he wished to avoid his responsibility, and he would only ask, for himself and for others whose views he was in a position to express, that it should be a rule or custom recognised by this Institution, that a surveyor must consider himself responsible to the builder for his work, and that builders were responsible to the surveyors for their charges. He thought all the difficulties of the case would thus be met.

Mr. J. HOWARD COLLS (Visitor) said he felt himself to be an "embarrassed builder," though not, he hoped, in the sense referred to by his friend Mr. YOUNG, but embarrassed at the wonderful divergence of opinion among the gentlemen

who occupied the position of quantity-surveyors. When it was considered that the builders' business was the only one for which, he believed, quantities were supplied at all, it seemed to him that surveyors ought to be perfectly willing to guarantee their quantities without question.

The builder's operations and contracts were usually very small compared with the gigantic constructional works carried out, by other trades, where no quantities were furnished to the contractor, and his opinion was that, unless surveyors were willing to undertake the responsibility of their own quantities, so many difficulties would arise that the end would be that quantity-surveyors would be abolished altogether. The system of quantity-taking had no doubt led to an enormous amount of competition. Lithography was very cheap. It had been said in this discussion that builders had the matter in their own hands. What precaution did quantity-surveyors, on their part, adopt to prevent the harmful and abnormal competition existing in the present day? Some quantity-surveyors would not, he believed, hesitate to send out fifty sets of quantities for one job if they were asked to do it. At the same time he had never had any difficulty with quantity-surveyors, and he agreed with Mr. SIDNEY YOUNG that the present arrangements worked, on the whole, very well.

He remembered attending a meeting where he heard an architect say, "The right person to take out quantities is the architect, for an architect not only knows what he wants, but also knows what his client wants to spend!" He agreed with Mr. YOUNG that the building-surveyor existed neither for the sole good of the building-owner nor for the builder alone, but to stand between the two. Builders did not want full quantities nor short ones. They wanted accurate quantities; such quantities as should properly represent the work which they had to do.

MR. T. F. FRANKLIN (Visitor) generally agreed with previous speakers in seeing no reason why the quantity-surveyors of London should shirk their responsibility. Men who had been in practice for years, or younger men who did their work thoroughly and accurately, did not, he was sure, wish to avoid the responsibility that devolved upon them. He thought that if builders would take a little more trouble to show up the men who produced quantities that were not correct, and therefore of no value, they would benefit the surveying profession as well as themselves.

There was, he thought, some little misapprehension about the case of *Priestley v. Stone*, to which he would refer. The Judge who presided on the occasion of the trial did not touch at all the question whether the bills of quantities were accurate or not, although that was the point upon which MESSRS. PRIESTLEY & GURNEY mainly depended, and they expected to have had to prove their incorrectness; but a mine was sprung upon them, and they were obliged to submit to a judgment which no doubt was correct, but against which they might have been encouraged to appeal had the action been brought on the grounds they anticipated. With regard to the question as to who is liable for payment for quantities it might be interesting to refer to a question put to himself as a witness in this case by the counsel who represented the defendant, somewhat in this form:—"Supposing you had taken out the quantities for some building, and supposing it had been stipulated, as it often is, that you were to be paid out of the first instalment, and supposing when the builder had obtained his money he did not pay you, and supposing the building-owner said he did not consider himself responsible, and supposing the architect had given you his sanction to do the work but said he would not pay you then, what position would you

“ feel yourself to be in, and what steps would you take ? ” The question was a long one, and it took him rather by surprise, but after it had been repeated by counsel he (Mr. FRANKLIN) replied that if he were placed in such a position he should certainly go to some distinguished member of the legal profession and ask his advice as to what steps should be taken under the circumstances ! The Judge agreed that if it were a legal question it would be the worst thing a surveyor could do to attempt to determine who was responsible.

He congratulated the Members of the Institution on the interest they had manifested in the question of “ quantities,” and considered that all were indebted to Mr. HUNT for the manner in which he had handled the subject.

Mr. HOWARD CHATFEILD CLARKE (Fellow) said there seemed to him to be two points on which the Paper turned — first, who was liable to pay the surveyor, and, secondly, was the surveyor liable to the builder ? These had, he thought, been rather skipped over in one or two of the speeches. Speaking as an architect he maintained that drawings were, as a rule, better prepared than had been assumed by several of the speakers, and he knew that surveyors often got what were, practically, full-sized details. He thought, before a tender was invited, most architects felt it their duty to ask the client if he wished quantities to be taken, and the client often in consenting named the surveyor whom he would wish to do the work. The architect then wrote to the builder and asked him if he would like to submit a tender for such and such works from drawings prepared by him, and if he would be willing for Mr. ——— to take off the quantities, “ as between the parties.” Here was a distinct invitation to the builder, and he could either say “ yea ” or

“nay.” If he said, “I am prepared to tender on those terms,” he thought there was a contract between the quantity-surveyor and the builder. The latter knew who was taking out the quantities, and was liable to him for his charges. The question of payment of the surveyor was, as a matter of convenience, put in the whole contract amount with the builder. He did not think a surveyor, knowing of such a letter signed by the architect, would deny that he was liable to the builder for the quantities.

As to who was liable to pay the surveyor, whether the building went on or not, it seemed to him that the building-owner should pay. He either knew that the quantities were to be taken, or he, through his architect, had employed the surveyor to take out the quantities, thus, he thought, making himself liable through his agent.

The making the quantities part of the contract would, he thought, be a great mistake, and, it seemed to him, would eventually do away with the quantity-surveyor altogether. The very object of paying that gentleman so well was that he should be responsible, and if the responsibility were done away with the surveyor himself would not long exist. Therefore he thought it better that the contract should be taken without reference to the quantities, the builder merely agreeing that a certain surveyor should take out the quantities as between himself and the building-owner.

MR. JOSIAH HUNT, in replying, very sincerely thanked the Members and Visitors present for the careful consideration which had been given to his Paper, and for the many kind things which had been said of it as a whole. In giving anything he always endeavoured to give his best, and this Paper had been so given, and as such appreciated. While thanking the speakers for

their criticisms, he thought that many of these criticisms had arisen from not taking into account the very limited scope of the Paper. As he had said, "Bills of quantities are prepared under such varying circumstances, that it is impossible within the limits allowed for this Paper to consider more than such as are of ordinary occurrence."

He had been taken to task by Mr. WIDNELL for writing of "quantity-surveyors." He himself did not like the term, if used in a restrictive sense, but thought that if used in a descriptive sense it was not objectionable. Surveyors were called "quantity-surveyors," "measuring-surveyors," "valuing-surveyors," &c., according to the employment on which they were at the time engaged. The bench and the bar when speaking of surveyors engaged in preparing quantities spoke of "quantity-surveyors." As the Paper was restricted to the cases where surveyors were employed upon quantities, he had used the term "quantity-surveyors" descriptively and in order to show clearly of what he was treating.

He did not think that Mr. WIDNELL's proposed letter, from the surveyor to the builder tendering, would answer the intended purpose. It would not constitute privity of contract, for there not being any valuable consideration given by the builder there would be no contract between the builder and the surveyor.

He was glad that the subject of the motive of bills of quantities had been touched upon by Mr. WIDNELL, Mr. ASHBY, Mr. STEWARD, and others.

Here, again, the compression of the Paper had been overlooked. He had written "that in all cases *which we shall consider*, the quantities are prepared for the benefit of the building-owner." Outside of the cases considered in the Paper, quantities might be prepared for builders or others,

but in his restricted sense the maxim held good. Mr. ASHBY had missed the point of Lord COLERIDGE's dictum, which was that it is "the part of the builder to pay the surveyor." Where the quantities are prepared for the building-owner, it was not the part of the builder to pay the surveyor, and Lord COLERIDGE was speaking of a case where the quantities had been prepared for the building-owner, hence he thought, respectfully, that his lordship's dictum was wrong. Undoubtedly, in ordinary cases, the quantities were prepared for the convenience of the builders tendering, but this was secondarily, not primarily. He would not cavil about words as to the employer buying in the cheapest market. All the meanings tended to the same end. If he had said "obtain the work on the terms which he considers best," there would probably have been no verbal difference of opinion. And when Mr. ASHBY spoke of each builder working for his own interest in the preparation of an estimate, he granted it all, but there might be six or more builders each working for his own interest, but all working for the benefit of the building-owner, whether they thought so or not.

In his opinion, the origin of bills of quantities must be thoroughly understood before any other questions concerning them could be usefully considered, and this question which he had treated as a "maxim" underlay all the rest. Quantity-surveyors had always been servants and would always continue to be so. Forty years ago architects rarely interfered with quantities; on special occasions they appointed a surveyor to represent them, or rather their employers; but this surveyor did not act alone, he always worked in conjunction with a surveyor nominated by the builders.

But these were exceptional cases; in the great majority

of cases the architect had nothing at all to do with the surveyor. The builders were perfectly free to take their own quantities whether the competition was limited or public. The builders met and appointed a surveyor to prepare the quantities for the whole, the majority of builders binding the minority as to the surveyor to be appointed. This was for limited competitions. For public competitions a surveyor obtained the support of such builders as he knew who wished to tender, and he supplied the quantities to such builders, often to the whole of the builders, but at times there were two or more surveyors, each taking off the quantities for his own list of builders, but only one surveyor got paid, if one: the rest had their labour and expense for nothing. The rarest thing was for an individual builder to take out his own quantities at his own expense. The surveyors were then the servants of the builders. Neither owner, engineer, nor architect had anything to do with the quantities, the builder paid the surveyor because he was the employer, and was paid by him if there was any deficiency in the quantities. The quantity-surveyors did not change the circumstances. As a body they were contented with this condition, which might have gone on to this day so far as the quantity-surveyors and the builders were concerned.

The change came from the architects, who saw the almost universal adoption of bills of quantities, and who, for reasons which he need not discuss, determined to get the employment of surveyors into their hands, and not to leave the initiative in the hands of the builders. Little by little, gradually, if imperceptibly, they ousted the builders from having any voice in the appointment of surveyors and assumed the right themselves.

Neither the architects, the surveyors, nor the builders

saw the radical alteration which was being made by the change in the employment. But the change was there, nevertheless. The surveyors, who had been the servants of the builders, and were content to be so, became the servants of the architects, and through them of their employers; and thus, without the exercise of any volition on the surveyors' part, the architects became and remain the masters of, he hoped, good and faithful servants. It was simply following the law of adaptation to environment. Some who had been quantity-surveyors forty years ago were quantity-surveyors still, but the change of the environment could only be fully appreciated by those who had passed through all the phases of the transition.

It was out of this gradual but complete change of circumstances that the difficulties had arisen—1st, as to the liability to pay the surveyor; 2nd, as to the liability for the surveyor to pay for deficiencies in quantities. There was no difficulty when the surveyor was the servant of the builder. Each paid the other, but the surveyor did not pay the building-owner—why should he? The circumstances being wholly changed, the building-owner, through his architect, now employed the surveyor, and was liable to pay and be paid by him, but regardless of the entire alteration of the nature of the employment it was now said that although the builders had nothing to do with the employment, the surveyors, who were not employed by them, ought to guarantee the quantities to them, and to pay them for any deficiencies, while they at the same time put the result of any excesses into their own pockets and gave no account of it to anyone.

So then, notwithstanding anything that might be advanced to the contrary based upon the traditions of times past, so

long as circumstances remained as they were, and surveyors received their appointment from the architect of a building-owner, the fact remained that the quantities were prepared for the benefit of the building-owner.

He did not think Mr. ASHBY quite right as to the liability of an auctioneer. So long as the auctioneer kept to the instructions received from the vendor he incurred no liability to the buyer or to anyone else. If the vendor, through his auctioneer, made a misrepresentation, the vendor, not the auctioneer, must be responsible for the misrepresentation.

He considered it unwise for the builders to under-estimate their possible influence. They should remember the old adage, "United we conquer, divided we fall." As units, each fighting for his own hand, they could have but little power, but working collectively, as they should, through their Institutions, they could achieve much.

An assumption had been imported into the Paper by Mr. RICKMAN which was scarcely to be found in it. The responsibilities of the surveyor were not made dependent on the perfect accuracy of the drawings and specifications, which was rarely found. The surveyor should try to make drawings and specifications harmonise throughout if he found discrepancies in them, but his responsibility was not restricted to the cases where all the drawings and instructions were perfect.

But he agreed that the representations made by the surveyor in the quantities should be what an independent mind would naturally draw from the information supplied, and if the surveyor had done this he should not be held liable for any other interpretation which any other person might have placed upon the information.

Errors in quantities arose from many causes irrespective

of imperfect information. A surveyor might be called from his work to attend at once to something else, and when he returned to his quantities he could not always readily gather up the threads as he had left them. "Not every thought to every thought succeeds indifferently" is true in quantity-taking as in metaphysics.

But blunders more frequently arose in abstracting, billing, and even lithographing than in taking off. For all these it was sought to make the surveyor responsible. The heaviest blunder which ever went out of his office was in abstracting, and the error was passed when the abstract was checked in an office of the highest class. He had once paid £150 to a builder, to whom he was not liable, for a lithographer's error. The figures of one item had been shifted from the left-hand column to the middle column, so that the item read as feet instead of as squares. The liability to error was constant, and it was only by great and continuous care that its constant occurrence could be avoided.

He could not admit Mr. RICKMAN's view, that in discussing the four classes of quantities he had endeavoured to establish a custom from the present state of affairs. So far from this, he had not relied upon custom at all, because he knew of no custom which would help the consideration of the question, except the custom that an architect usually employs a surveyor to prepare the quantities. Even as to that custom, he could not go to the extent of saying that it was a custom that the architect should so employ a surveyor without the knowledge of the general employer, the building-owner. To his mind, such a custom would be an unreasonable one, and therefore an invalid one.

The additional case proposed by Mr. RICKMAN, "where the surveyor was not employed by the building-owner or architect, and the work did not go on," was outside the

scope of the Paper. In such a case the surveyor could not possibly have any claim on the building-owner. Who could conceive that he had ?

He was not wedded to the order in which the four classes were placed, and Mr. RICKMAN should not suppose they were treated as a chain. They were really detached links. The arrangement was made as being convenient for understanding the position, but any other arrangement might be adopted if considered preferable.

He must leave the question of making quantities part of the contract where he found it, and he was not led to like it any more by what had been said about it during the discussion. Mr. RICKMAN would have the good quantities so incorporated and not the bad, but the builders who gave evidence before Mr. Justice STEPHEN in *Priestley v. Stone* said :—"If we have any reason to suspect the quantities, and "entertain any doubt about the quantity-surveyor, then we "take care to have the quantities put into the contract." And it was unfortunately no use telling him that this system when adopted did not lead to carelessness, because he had seen that it did, and, if time had permitted, could have given many solid reasons why it was almost a necessity that it should do so.

It was useless to say that a building could not be finished without extras, for it was well known that it could ; but that was not the point. If the owner ordered extras, he would pay for such extras ; the objection was to paying a larger price for the original building without any extras having been ordered.

With regard to the rights of surveyors it had been said that this question, as to who must pay the surveyor, occupied a great portion of the Paper, and that it need not occupy two words, if the saddle were once put on the right horse.

But in the tangled maze which must be threaded, in the labyrinth not made by the surveyor but for him, it was often far from easy to find the right horse, or a horse at all.

If his (Mr. HUNT's) views were correct as to classes 2 and 4, the surveyor might do all his work in all good faith, and yet go unpaid ; and in class 4 the builder might have used the quantities, obtained a contract by using them, and obtained from the building-owner the full amount of the charges for quantities and lithography, and having obtained this might put the money into his pocket, and laugh at the surveyor when he asked him to pay for the work done and for the money spent. Was there a right horse here ?

To nearly all the propositions put forward by Mr. WOODWARD he must give an emphatic negative. Since quantity-surveyors had been the servants of the architect and not of the builder, there had not been any privity of contract between the surveyor and the builder. He had said in this building, some ten years ago, that there was no such privity of contract, and could only repeat what he had then asserted. *Priestley v. Stone* made no difference as to the existence of privity of contract. It only brought into clear light what ought to have been understood without it.

It had *not* always been clearly understood that, if a building-owner instructed an architect to obtain tenders for a building designed to order, the architect had authority to employ a surveyor and to make the building-owner liable to pay the surveyor without the building-owner having any knowledge as to the employment of this surveyor. The opinion of Lord COLERIDGE, in *Schofield v. Barnardo*, was against such an assumption. Most strongly was the opinion of Mr. Justice DENMAN, in *Young v. Blake*, against such an assumption. It was, therefore, most presumptuous to say that such an assumption was "law." He would not go

further than Mr. Roscoe had done when he said, "That in
 " the absence of any authoritative decision on the point, it
 " cannot at present be decisively answered as to whether or
 " not the building-owner is liable in such a case."

It was not necessary again to slay the slain, and to expose the fallacy of the supposed shifting or passing-over theory of contract. The "Balaam" of Mr. Justice STEPHEN gave that its death-blow, and Lord Justice LINDLEY finally extinguished it. It never had been established, and never thoroughly understood. All that part of his Paper dealing with the shifting or passing over of a contract was written before *Priestley v. Stone* was heard of, so that he was not indebted to this case for his views as to its fallacy.

His remarks on page 157 as to guaranteeing quantities had no reference to the case of *Priestley v. Stone*, but stood or fell irrespective of it. As to this much-talked-of case, he could only repeat his former assertion that it was a most exceptional and isolated one, but that the judgments had an importance far beyond this exceptional case in having laid down general principles which went to the root of all relationships between surveyors and builders.

The present uneasiness on the subject had been considered by some of the speakers to be groundless, but he was sure the builders did not think so, and that the almost universal opinion of surveyors agreed with the builders—the bench, the bar, the professions, and the trades all agreed—in deprecating the anomalous position which the case of *Priestley v. Stone* had only made more apparent than before.

He hoped that special attention would be paid to the valuable remarks made by Mr. EMDEN, which he (Mr. HUNT) wished had been amplified. As the outcome of a legally-trained mind, they should have a special value for

surveyors. Alike in the conclusions and in the suggestions, these few remarks should be carefully weighed.

He must apologise to the gentlemen who had spoken last, for the very brief notice he could give to their remarks, as his infirmity of hearing had prevented his fully grasping all that had been said.

He was sure that Mr. STEWARD's able remarks as to the position of the builder were worthy of careful consideration, and that what he had suggested with reference to giving copies of dimensions was perhaps one of the very best ways out of the difficulty. He (Mr. HUNT) had said that an employer was entitled to ask for a copy of the dimensions, though he thought that giving it was sometimes mischievous; but he did not think that anybody but an employer had any right to ask for such copies.

With reference to the remarks of Mr. SIDNEY YOUNG on the case of *Young v. Smith*, it had not seemed to him that there was any employment by Dr. SMITH of Mr. YOUNG, and that, therefore, the latter would fail in his contention for the building-owner's liability. If he had applied to the builder and attempted to shift his position he could understand his failing. But he could not attempt to deal with an unreported case, for every case at *Nisi Prius* depended upon the special elements imported into it, and unless one knew the circumstances, and the whole elements of it, it was impossible to come to a right conclusion. He thought the law had been emphatically laid down of late, and more particularly so in the case of *Priestley v. Stone*, and he failed to see how a surveyor could recover against a builder when he had not been in any sense employed by the builder.

It had been recently suggested, in an article in a building

journal, that the quantity-surveyor be improved off the face of the earth, or, to use the writer's words, "got rid of for good." And how was this to be done? "By multiplying drawings and specifications, and placing copies in the hands of each estimator." But the writer did not see that, having done this, he was no nearer his estimate than before he began multiplying. This process had been adopted within the last few months; the drawings and specifications were multiplied and copies supplied to many builders who wished to tender, and sufficient time allowed for taking out the quantities. Did each of these builders take out the quantities, as the writer said they would and could do, separately? Just otherwise; all the builders took the quantities from one quantity-surveyor, and the employers had the "multiplying" expense for nothing, and had to pay a larger charge for the taking out the quantities than if they had been taken out in the usual course. So this process did not seem likely to "get rid of the surveyor for good" at present. But was it not utter nonsense to suppose that builders would take out their own quantities for the purpose of competitive work? Why, to some builders who estimate largely it would mean an addition of at least £5,000 per annum to the expense of their staff, and this useless expense must be paid for by some employers, for it was quite certain builders would not be so foolish as to incur such an expense without being recouped in some way for it.

"Quantities," said the writer, "have essentially nothing to do with architecture whatever." Who dreamed that they had, except this writer? The architect designed, the quantity-surveyor interpreted the design. *Chacun à son terrain*. Surveyors did not wish to interfere with architects, or to be interfered with by them.

The last paragraph of the article in question was amusing. The writer said, "The quantity-surveyor was originally " and essentially the servant of the builder. He now wants " to pose as the master of the architect." Quantity-surveyors were the servants of the builders, and were content to remain so. The architects ousted the builders from being masters, and made themselves masters in their place. But the statement that surveyors now wanted to pose as masters of the architects was a ludicrous delusion, without the smallest foundation of fact.

But if this writer had a great dislike to quantity-surveyors as a profession, he appeared to have a still greater dislike to the modern system of "competition estimating." This competition he stigmatised as "one of the very banes " of the art of architecture." How it became such a bane the writer did not stoop to tell. Competition neither made nor marred the artistic or architectural merit of any design. He (Mr. HUNT) had said so much all his life against reckless competition, whether by builders or architects, always contending that a fair price was necessary to obtain good work, that he was not now likely to become a champion for recklessness. But he contended that fair competition was a good thing all round, and that bad work was not necessarily consequent in any way on fair competition. He had seen much of the writer's plan for architects to give their work without competition to men they knew, and in whom they had confidence that they would get good work at a fair price, but was sorry to say that its adoption frequently resulted in failure, dissatisfaction, and quarrels. Architects who were artists had too often a great impatience of strict business habits, and an undertaking entered upon in an unbusinesslike way usually had an unsatisfactory result. He

had seen the very best work produced under competition, and very bad produced in work given without competition. In these days competition could not be done without, but if adopted and fairly used it was stronger and sounder in principle than any efforts that could be brought against it, as long as it was not strained illegitimately.

The writer to whom he had referred evidently did not understand the propositions put forth in the Paper, but those who heard it no doubt grasped his meaning. He (Mr. HUNT) had endeavoured to inculcate a truly high standard of morality, a setting forth of moral law as paramount to any other consideration, but he could not understand by morality "an obligation to do to another that "which he is not entitled to ask." It might be done as a favour, but not as an obligation.

He must forcibly reiterate his objection to the putting law and justice in contradistinction with each other. As citizens in a commonwealth we live under law; we make our contracts under law; our disputes must be settled by law; for men to do that which is right in their own eyes is not justice—it is anarchy.

He trusted that this discussion would not be altogether fruitless, but builders or surveyors must endeavour to realise the position in which they stood, and their relations to those with whom they were associated. The full understanding of this was necessary before any effectual attempts could be made to improve those relations.

In seeking any improvement, everyone must consider his own interest, but for the improvement to be lasting, it must include the interests of all the parties who were concerned.

THE CHAIRMAN having briefly expressed on behalf of

the Members their sense of obligation to **Mr. HUNT** for his valuable Paper, and his regrets that he was precluded by the lateness of the hour from attempting to sum up the principal points which had been raised and considered,

The Meeting adjourned.

THE FACTS ABOUT RYE-GRASS AS DETERMINED BY EXPERIMENT.

By W. FREAM (ASSOCIATE).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION, Monday, March 4th, 1889.*

MR. ELIAS PITTS SQUAREY (PRESIDENT) IN THE CHAIR.

WHEN I was honoured a couple of years ago by an invitation to read before the Institution a Paper on some subject connected with grass lands, it was then my intention to deal with the matter in a rather more general fashion than the title of the present Paper would appear to indicate. Recent occurrences having served, however, to again bring rye-grass prominently under the notice of agriculturists, I venture to hope that this may be accepted as a sufficient reason for my imparting to this Paper so special a character.

In laying land down to permanent pasture, the object which every cultivator has had in view, and the goal presumably at which he hoped he should arrive, has been the establishment of grass land comparable with the fine old feeding pastures which constitute so valuable a feature of the surface of Great Britain and Ireland. Many attempts have been made, and much has been written, in connection with this highly important problem. But the more I have studied the literature of our grass lands, the more have I become impressed with the circumstance that, in all attempts to establish new pastures by the sowing of seed, one most significant factor has been left out of consideration, and

indeed has, apparently, never formed the subject of systematic inquiry, and that is, the exact nature of the herbage which covers our best old grass lands. What, for example, are the grasses which constitute so large a part of the green growth of those celebrated pastures which are at once the pride of those who possess them and the desire of those who do not? Given an answer to this question, cultivators would have before them a definite object to work for, whereas in the absence of such information their mode of procedure was bound to be, to some extent, empirical, and hope alone would fill the place which confidence ought to occupy.

With the view of obtaining some definite information on the point indicated, I procured, during the winter of 1887-8, a series of 25 blocks of turf, representing some of the best old grass lands in England and Ireland. With one or two exceptions these turfs were all dug of uniform size—two feet long, one foot broad, and nine inches deep. As the blocks of turf were received they were planted in a special bed in the Botanical Garden, at the College of Agriculture, Downton, so that the herbage was brought on a level with the surrounding surface. The plants themselves were thus not disturbed, and they continued growing upon their own soil, there being obviously no transplantation in the usual sense of the term. A strict watch was kept from day to day upon the herbage of each turf, and every species of plant was noted directly it became possible to identify it. But the object in view was not only to learn what plants were present, but also to obtain information concerning the relative abundance of various species, particularly of the grasses. As growth progressed, I became convinced that it was not possible to determine this latter point by means of the eye alone, and I therefore decided to resort to the balance. Accordingly, during July, the herbage upon each turf was mown, and at once sorted into its proximate botanical constituents—(1)

grasses, (2) leguminous plants, and (3) miscellaneous species, and each of these groups was further divided into its specific elements, which were weighed in the green state directly the botanical separations were completed. Whilst the absolute numbers thus obtained are not of great importance, the order of predominance they serve to assign to the various species is, on the other hand, of very great practical interest. Arranging the results in tabular form, I was able to show the percentages of gramineous, leguminous, and miscellaneous herbage yielded by each turf, and, proceeding further with the grassy herbage, I recorded for each species of grass what percentage of weight it represented of the total grass produced.

The blocks of turf comprised 17 from England and 8 from Ireland. The English specimens included 3 from Somerset, 2 each from Dorset, Wilts, and Kent, and 1 each from Lincolnshire, Leicestershire, Derbyshire, Staffordshire, Buckinghamshire, Gloucestershire, Herefordshire, and Devonshire. The Irish specimens were 1 each from the counties of Dublin, Kildare, Meath, Mayo, Clare, Tipperary, Cork, and Wexford. There were thus brought under observation representative specimens of old pasture drawn from many parts of a considerable area, bounded on the north by a line extending from Lincolnshire to county Mayo, and on the south by the coast.

Restricting further remarks to the gramineous herbage only, there were detected on the 25 turfs as many as 20 species of grasses altogether. But on no single turf did more than 10 species of grasses reveal themselves, and on one turf from Herefordshire, yielding 88 per cent. of gramineous herbage, this high proportion of grasses comprised not more than 3 species. Undoubtedly, however, the most important evidence these blocks of old pasture afforded was that relating to rye-grass. As many as 24 out of the 25 yielded

this species, which in the generality of its distribution came out at the head of the list. More than this, out of the 24 cases in which it was present, rye-grass was first in actual quantity on 21 of the turfs; it was second in quantity on two others (Staffordshire and Wexford), and third in quantity on the remaining turf (one of the Wiltshire specimens). In the 24 turfs on which it occurred, the lowest proportion by weight which rye-grass constituted of the total grasses was 10 per cent., the highest was 100 per cent.

The greater the number of samples of grass land examined in this way, and the wider the area from which such specimens are drawn, the more reliable should the general conclusions become, and perhaps no better idea of the position held by rye-grass in the constitution of the herbage of our prime old grazing pastures can be obtained than by dividing the total percentage of this species by 25—the number of turfs. Adopting this plan, that is, taking one turf with another, it is found that the average proportion of rye-grass yielded by the whole series is no less than 68 per cent. of the total grasses. In other words, it comes to this:—If the turfs had been planted close together they would have covered an area 50 feet long by 25 feet broad, which is equivalent to one-thirty-fifth of an acre. On this composite pasture made up of equal parts of 25 different pastures existing in as many districts in England and Ireland, it was found in the month of July, after the herbage had been allowed to grow, that rye-grass formed no less than two-thirds of the total quantity of grass produced. For further details concerning these experiments I must refer to a Paper on “The Herbage of Old Grass Lands,” which I contributed to the “Journal” of the Royal Agricultural Society (part ii., 1888). I proceed to describe another investigation, carried out in a very different manner.

For some years Sir JOHN LAWES and Dr. GILBERT have

kept under observation a Leicestershire pasture, near Market Harborough, which was specially selected for examination on account of its exceedingly high fattening character. The method pursued by these illustrious investigators differed in every possible way from my own. They caused to be examined *in situ*, in different years, and at different periods of those years, the herbage growing on this excellent pasture. There was no digging of turf, and no transportation of a block of the pasture to another locality. The herbage was sometimes cut, and sometimes hand-picked to resemble the action of grazing, and what were considered fair representative samples of the entire growth were, on no less than eleven distinct occasions in four different years, subjected to quantitative botanical analysis; the dry yield of each species was weighed, and the numerical results recorded. The samples were gathered twice in 1879 (May 31st and June 21st), six times in 1880 (May 20th, 31st, June 25th, July 6th, 21st, and August 6th), twice in 1882 (May 22nd and June 28th), and once in 1888 (July 6th). Here, then, we get the results of botanical examinations of a far-famed pasture made at various periods between the dates of May 20th and August 6th in four distinct years, differing much in their meteorological characteristics. Concerning rye-grass the recorded figures afford some instructive information. Taking the proportion which rye-grass formed of the total grassy herbage, the lowest of the eleven results was 15 per cent. of rye-grass on August 6th, 1880, the highest was 63 per cent. on May 20th of the same year, whilst the average of the entire series shows rye-grass to form 34 per cent. of the total grasses. But, respecting this unique investigation, I cannot do better than quote the salient portions of a letter which Sir JOHN LAWES himself published in January last. Sir JOHN says :—"After reading Dr. FREEM's Paper on 'The Herbage of Old Grass Lands,' in the last number of the 'Journal' of

“ the Royal Agricultural Society, I certainly thought that
 “ the claims of rye-grass to be considered a very important
 “ element in our permanent pasture were fairly established.
 “ It is an undoubted fact that in a pasture in Leicestershire
 “ which was selected by us for examination on account of
 “ its extremely high fattening character, rye-grass was first
 “ in amount in 8 out of 11 samples taken at as many different
 “ periods, over 4 different years ; and it came second in order
 “ in the other 3. It contributed an average of 27 per cent.
 “ of the total herbage in the 8 samples, and of nearly 15
 “ per cent. in the remaining 3 ; corresponding in the 8
 “ samples to about 43 per cent., and in the 3 to about 24
 “ per cent., of the total grasses. The plant next in order
 “ of amount was white clover, which on the average of
 “ the 11 samples contributed more than 23 per cent. of
 “ the total herbage ; only very small amounts of any other
 “ leguminous species being present. At the times of our
 “ examinations the pasture was fattening more than one
 “ bullock per acre, without any cake excepting towards the
 “ end of the season, and a little given to sheep during the
 “ winter. The original examinations were made, two in
 “ 1879, six in 1880, and two in 1882 ; and in July of last
 “ year, 1888, we examined a further sample from the same
 “ pasture. Rye-grass was still the most prominent species,
 “ yielding $36\frac{1}{2}$ per cent. of the total herbage, and nearly 42
 “ per cent. of the total grasses. In answer to inquiries as to
 “ the produce of this field last year, the owner informs me
 “ that it fattened more than one bullock per acre. The
 “ beautiful colour of the herbage, and its extreme evenness
 “ as the result of the feeding, are very marked ; and with
 “ bullocks fattening at the rate of more than one per acre, it
 “ is obviously impossible that the prominence of the rye-
 “ grass can be due to its being left by the animals, and so
 “ allowed to seed. With this example before us, it cannot

“ be doubted that under some conditions of soil, climate, and treatment, rye-grass has high feeding qualities.”

Having thus adduced certain experimental evidence in favour of the claim of rye-grass to be considered an important constituent of the herbage of pastures, it is now desirable to inquire what arguments have been advanced against this species, and on what grounds such arguments are based.

It is well known to agriculturists that in the year 1882 Mr. C. DE L. FAUNCE DE LAUNE contributed to the “Journal” of the Royal Agricultural Society a Paper “On Laying down Land to Permanent Grass.” In the course of this Paper Mr. DE LAUNE framed what then was, and still is, regarded as a most weighty indictment against rye-grass. In preparing my own recently-published Paper I carefully abstained from any criticism of Mr. DE LAUNE’S opinions, and I did not myself refer in any way to that gentleman’s investigations. The reason was that I thought it possible that Mr. DE LAUNE’S conclusions and my own might really be found to be not inconsistent with each other, and I accordingly determined to leave the question open till some expression of opinion should be given either by Mr. DE LAUNE or by those who thought with him. Such expression of opinion was in due course forthcoming, and it certainly could not be regarded as otherwise than adverse to the conclusions which I hoped I had established. At the meeting of the Council of the Royal Agricultural Society, on December 12th, 1888, Earl CATHCART took occasion to remark that my Paper in the Society’s “Journal” “no doubt, was apparently in contradiction to the opinions as expressed in the Papers by Mr. DE LAUNE, and published in 1882, and to the subsequent advice thereupon of the Society’s Consulting Botanist.” His lordship, appealing to Mr. W. CARRUTHERS, F.R.S., the Consulting Botanist, added that “the Council would be glad to hear and publish any observations which Mr.

“CARRUTHERS desired to make on the whole subject now in “question.” In response to this invitation Mr. CARRUTHERS gave a very interesting address, in the course of which he said that, “with all the knowledge he had on this subject, “he was still confirmed in the opinion that the views which “he had expressed, and which agreed with those advocated “by Mr. DE LAUNE, were the true views in regard to rye-“grass.” It is desirable, therefore, that I should at this stage examine Mr. CARRUTHERS’s criticisms and objections, though I need hardly say I feel that I am particularly unfortunate in finding myself at variance with my esteemed and distinguished friend on a point of so much importance.

In the first place the depth of my turfs was objected to as insufficient. “It was quite well known,” said Mr. CARRUTHERS, “to those who had experience in such matters, “that in cutting away to a depth of nine inches of turf, “the deep-rooted plants which belong to the pasture were “injured, so that the results would not be a fair indication “of the actual plants that were growing on the pasture”; and subsequently Mr. CARRUTHERS spoke of “these shallow “turfs.” To this I reply by asking, Who has had experience in such matters? So far as I know, my method of investigation was original, and so far from nine inches being a shallow depth for a turf, it is unusually great. As a matter of fact, indeed, I did not think so great a thickness necessary, but by taking nine inches I thought I should silence all possible criticism under this head. I can, however, adduce at least five facts in refutation of this objection—(1) In laying down turf, a thickness of $2\frac{1}{2}$ to 3 inches in the cut turf is usually regarded as sufficient. (2) The deeper faces of all my turfs were examined before planting and found to be practically free from roots; indeed, in some cases, the subsoil had been penetrated and contained no sign of roots. (3) Even if some of the hundreds of root-fibres of a grass

were cut at a depth of nine inches, there would be plenty of lateral rootlets higher up in the soil to preserve its life. On the other hand, a grass which could not live in a less depth than nine inches of soil would not be of much use to agriculturists. (4) If my turfs were too shallow, how came it that sorrel with its perennial and deeply-penetrating roots, and yarrow with its equally perennial and thick vertical roots, appeared so abundantly on some of the turfs? (5) As an actual case in point, the very successful attempt to establish permanent grass by "inoculation," as described by Mr. R. HODGSON HUNTLEY, of Carham Hall, Coldstream, in the "Journal" of the Royal Agricultural Society (vol. xi., page 463), may be cited. Mr. HUNTLEY writes:—"The *thickness* of the turves, I may state, would vary from $2\frac{1}{2}$ to 3 inches, according to the growth of the *roots*, the object being to remove the *whole* of the latter." It would have been of much interest if Mr. CARRUTHERS had specified the deep-rooted plants which, he states, were injured in the cutting of the turfs.

I merely note now the following further statement which Mr. CARRUTHERS is reported to have made:—

"He found that the unanimous testimony was that stock rejected rye-grass for other grasses wherever it was found, and that, consequently, the rye-grass was allowed by the stock to grow and disperse its seeds so as to increase enormously. Instead of being a testimony in favour of rye-grass, this was a testimony against it." Mr. CARRUTHERS further expressed his belief that my Paper, "instead of establishing rye-grass as an important element in our pastures, would throw fresh light on the whole question, cause more attention to be directed to it, and secure the complete elimination of rye-grass from permanent pasture in the future."

Mr. DE LAUNE's Paper is concerned with "the for-

“mation of permanent pastures.” Almost at the outset we read :—“The four coarse grasses, valuable beyond all others for permanent pasture, are cocksfoot, meadow fescue and its ally, tall fescue, catstail or timothy, and meadow fox-tail. These five grasses should form the bulk of all pastures on good soil, either for sheep or cattle.” What strikes the reader at once is that this is a bare assertion, and it seems like beginning at the wrong end.

Very shortly afterwards the attack upon rye-grass is opened, and it is stated :—“The grasses most pernicious to newly-formed pastures are first and principally rye-grass in all its varieties” Further on, Mr. DE LAUNE writes :—“All the grasses which I have mentioned above (twelve altogether), with the exception of rye-grass, are perennial, and do not die upon seeding, whilst all rye-grasses, or nearly all, die after once seeding ; unless, therefore, the seed is permitted to mature, fall, and germinate in the field, those grasses disappear from the pasture.”

Mr. DE LAUNE’S opinion of rye-grass is well set forth when he speaks (p. 251) of “rye-grass, soft woolly grass, and other bad grasses and weeds.” Later, he says (p. 254) :—“I have come to the conclusion that rye-grass is certain to cause exhaustion to the soil,” and on the same page he includes rye-grass amongst “the worthless grasses which are disliked by stock.”

The same number of the “Journal” contains (p. 604) another Paper by Mr. DE LAUNE, entitled “Additional Remarks on Laying down Land to Permanent Pasture,” wherein, reverting to rye-grass, the author reiterates his assertion “as to the absolute necessity of excluding it from all orders for seeds for permanent pasture.” He further says :—“My observations lead me to believe that rye-grass is detrimental to the formation of a new pasture, not only because it is a short-lived grass, but because, owing to the

“ shortness of its roots, it exhausts the surface of the soil ;
 “ and when it dies, the bare space left is so impoverished that,
 “ though grass seeds may germinate upon it, they will fail
 “ to live unless highly manured by accident or on purpose.
 “ Besides, the feeding qualities of rye-grass, as determined
 “ by chemical analysis, do not encourage its cultivation ;
 “ and in my own experience it has proved, at some seasons
 “ of the year, injurious to the stock.”

These very serious charges against rye-grass—quite sufficient, if true, to blast its reputation—I now proceed to examine.

It is alleged that rye-grass is disliked by stock, and that they invariably reject it for other grasses. But, if this is in accordance with fact, why is rye-grass so largely cultivated in association with trefoil and with clover? Our “ seeds ” hay has a high reputation, and the presence of rye-grass in a sample of hay is regarded favourably by buyers. General Sir F. FITZWYGRAM, in his well-known work, “ *Horses and Stables*,” says (3rd ed., p. 72) that good hay is characterised by containing a large proportion of the best grasses ; and, amongst these best grasses, he assigns the first place (p. 69) to rye-grass, with the remark that the hay made from rye-grass is good for horses. Sheep-breeders, especially those who use hurdles, are well aware that sheep like rye-grass, and that the shepherd never needs to be told twice that he may “ fold ” a field of rye-grass.

But a most valuable piece of evidence, proving that stock do not dislike rye-grass, and that they do not reject it in favour of other grasses, is forthcoming, and from no less an authority than Sir JOHN LAWES. Writing on the 23rd of January, this year, Sir JOHN LAWES placed on record his experience on his own farm at Rothamsted, as follows :—

“ The first permanent grass I laid down was in 1838,
 “ just 50 years ago. It has frequently been mown, and

“ it contains very little rye-grass. A long interval then
 “ occurred, the next being laid down about 25 years ago.
 “ This portion has generally been fed by cattle, chiefly young
 “ stock, but receiving cotton cake ; and it has only been
 “ mown two or three times. At the end of May, 1882, a
 “ sample of the herbage was submitted to botanical separa-
 “ tion, when it was found that rye-grass was by far the
 “ most prominent species.

“ The greater part of my new permanent grass was,
 “ however, laid down between 1873 and 1879. Owing
 “ to the strikes and disturbances among the labourers,
 “ in 1872, I thought it desirable to reduce the area of my
 “ arable land, and consequently the requirement for labour
 “ in the ordinary operations of the farm, which was especially
 “ necessary as my field experiments required so much
 “ labour. Some of the new grass has never been mown,
 “ but some has been mown occasionally. Wherever it has
 “ been mown, the amount of rye-grass has much diminished ;
 “ but where it has never been mown, but only fed by cattle
 “ having cotton cake, rye-grass is abundant.

“ In 1879, an arable field was laid down, and the hedge
 “ which separated it from the park was stocked up ; so that
 “ it then became united with the oldest of my grass-land.
 “ Prior to 1879, I had frequently mown this old grass, and
 “ previously, as was formerly the custom, it had probably
 “ been mown for hay every alternate year. Since 1879,
 “ however, it has not been mown, but grazed by dairy cows
 “ during the summer and autumn, and after the cows were
 “ taken off towards the end of October, store oxen have been
 “ turned in. Both the cows and the oxen received cotton
 “ cake the whole time they were on the land. The adjoining
 “ newly laid down grass received a heavy dressing of London
 “ dung the year after it was laid down, and has been dunged
 “ once since, and a good deal of dung has also been applied

“ to parts of the old pasture at different times. In fact,
 “ since the laying down of the new grass, the treatment of
 “ the two lots has been much the same, and the cattle go
 “ from one portion to the other as they please. On the old
 “ portion there is very little rye-grass, and all over the
 “ ground there are large bunches of other grasses, which the
 “ cattle will not eat, and however heavily I stock the land
 “ every year a quantity of grass remains unconsumed. On
 “ the newly laid down land rye-grass is very abundant, and
 “ from the beginning to the end of the season the whole
 “ field is fed down perfectly close ; so much so that it would
 “ be difficult to find a flowering stem of any kind during the
 “ summer ; and at the present time (January) the contrast
 “ between its appearance and that of the old pasture is very
 “ striking. Although so closely fed down, its colour is
 “ bright green, whilst the herbage of the old pasture is more
 “ or less brown.

“ Such is the history and condition of my permanent
 “ grass-land, so far as rye-grass is concerned. I had paid
 “ but little attention to the subject until the recent con-
 “ troversy in reference to Professor FREEMAN’S Paper ; and,
 “ so far from thinking that I ought to exclude rye-grass
 “ from my pastures, I am by no means sure that my old
 “ grass would not be improved if it contained a good deal
 “ more of it ; and I certainly shall try the experiment of
 “ sowing some seed upon a portion of it this spring.”

Nor is this all, for a few weeks ago I happened to be at
 Rothamsted, and conversation turning on this very subject,
 Dr. GILBERT produced an extremely significant bit of evi-
 dence which, through his kindness, I am able to quote. It
 is as follows, and is self-explanatory :—“ Dr. GILBERT’S
 “ Meadow (Harpenden).—Extract from notes taken by J. J.
 “ WILLIS in the winter of 1868, on the occasion of three
 “ cows being put into the meadow to graze.

“ November 26th.—*Lolium perenne* (rye-grass) is vigorous and healthy, and of a dark green colour. On the cows being first turned in they wandered over the whole meadow in search of the dark patches of *Lolium* (rye-grass), which they grazed quite close to the ground; the youngest and more succulent of *Dactylis glomerata* (cocksfoot) next took their attention.

“ December 10th, after the cows had been removed.—*Poa pratensis* (smooth-stalked meadow-grass) was rejected to the last, still remaining in large patches over the whole meadow, without so much as the tips being bitten off. *Festuca ovina* (sheep’s fescue) was refused where the animals could graze the other herbage without coming in contact with it. The coarser-growing *Dactylis* (cocksfoot) was not grazed so well as the younger and more succulent, which was generally eaten down to the bare ground. *Lolium perenne* (rye-grass) was grazed so close that not a fragment more could be bitten off, and not a standing blade or stem of this species was to be seen.”

Dr. GILBERT showed me the original notes (twenty years old) from which the above extract is taken. The notes were made by an observer both experienced and trustworthy, and the evidence they supply in favour of rye-grass is specially valuable in view of the fact that the observations were made, merely as a matter of interest, years before Mr. DE LAUNE commenced his campaign against rye-grass.

I now come to Mr. DE LAUNE’s assertions “that rye-grass is certain to cause exhaustion to the soil,” that, “owing to the shortness of its roots, it exhausts the surface of the soil,” and that “it is a short-lived grass.” And first as to “the shortness of its roots.” Against this assertion I place the statement of Sir JOHN LAWES, Dr. GILBERT, and Dr. MASTERS, in their most elaborate and

instructive memoir on "The Mixed Herbage of Permanent Meadow" ("Philosophical Transactions" of the Royal Society, part iv., 1882), where, speaking of rye-grass, they say, "The roots are much branched, fibrous, *penetrate to a considerable depth*, and give off a dense network of fibrils near the surface." Next, as to rye-grass being short-lived. We have had the evidence of Sir JOHN LAWES that on his own eagerly-grazed pasture, rich in rye-grass, and laid down ten years ago, "from the beginning to the end of the season the whole field is fed down perfectly close; so much so that it would be difficult to find a flowering stem of any kind during the summer." Then, again, with regard to the Leicestershire pasture, where examinations made in four different years, spread over a decade, have always shown rye-grass to occupy a prominent and usually the leading position, Sir JOHN LAWES states, as we have seen, "with bullocks fattening at the rate of more than one per acre, it is obviously impossible that the prominence of the rye-grass can be due to its being left by the animals, and so allowed to seed." Moreover, if, as is alleged by Mr. DE LAUNE and Mr. CARRUTHERS, rye-grass maintains its position year after year merely by seeding, why does it ever die out? And if, as is also alleged, "it is certain to cause exhaustion to the soil," why does it ever persist? Mr. CARRUTHERS said:—"Whatever plants were persistently rejected by stock were the plants that flower and seed and increase in number on a pasture, while all the good plants are eaten down by the stock, and the seeds prevented from being reproduced." If, however, this were really the case, pastures would speedily deteriorate, and year after year would grow worse and worse, whereas experience demonstrates that they improve with age.

Mr. DE LAUNE maintains that the feeding qualities of rye-grass, as determined by chemical analysis, "do not

“encourage its cultivation.” This point I venture to challenge. It has, indeed, already been disproved by some very careful analyses recorded by Mr. DAVID WILSON, M.A., F.C.S., in his Paper on “The Nutritive Value and Produce of some Permanent Grasses,” which appears in the “Transactions” of the Highland and Agricultural Society of Scotland for 1886. Mr. WILSON demonstrates “that the nutritive value of the “ young growth of rye-grass equals cocksfoot, being superior “ to that grass in its percentage of carbohydrates, but inferior “ in albuminoids. When coming into bloom, rye-grass is “ superior to cocksfoot in nutritive value, and when the seed is “ nearly ripe it also shows a better analysis.” Mr. DE LAUNE quotes a statement, disparaging to rye-grass, made by SINCLAIR, and based by the latter upon the crude methods of organic analysis in use during the early years of this century. “This “ statement,” says Mr. WILSON, “however, is not borne out “ by my experiments,” which, he shows, really justify a statement “much more in favour of rye-grass.” Summarising his results, Mr. WILSON points out that, for whatever cause it may be deemed desirable to exclude rye-grass seeds from mixtures for permanent pastures, it will not be on account of the deficiency of rye-grass in feeding value. Moreover, the analyses of grasses given by Dr. J. A. VOELCKER in Mr. MARTIN J. SUTTON’s work, “Permanent and Temporary Pastures,” also assign to rye-grass a very satisfactory position in respect of its nutritive qualities. But, after all, this point as to the feeding value of grasses is one that cannot be settled by the test-tube and the balance alone; our herbivorous animals themselves must be consulted, or, at least, watched. It is some years since Sir JOHN LAWES expressed the opinion that the grazing animal was the best judge of the point at issue, and certainly, if we may estimate the value of rye-grass, both by the predilections of the animals themselves, and by the results produced by the

grazing of pastures rich in rye-grass, then this much-abused species has nothing to fear.

MR. DE LAUNE's assertion that cocksfoot, meadow fescue, timothy, and meadow foxtail "should form the bulk of all "pastures on good soil, either for sheep or cattle," is well worth testing in the light of ascertained results, more especially as the species referred to are pointedly named to the exclusion of rye-grass. I claim that the Leicestershire pasture which Sir JOHN LAWES and Dr. GILBERT have had under examination, and that the pastures from which the turfs were drawn for my own investigations, must all be regarded as pastures of the high quality to which MR. DE LAUNE refers. Taking the average of all the results obtained in the exhaustive examination of the Leicestershire pasture, I find that among grasses rye-grass easily occupies the first position for abundance, timothy comes only sixth, and cocksfoot seventh; meadow foxtail falls very considerably below one per cent., whilst meadow fescue was found but once in the entire series of eleven examinations, and then only to the extent of half of 1 per cent. of the total grasses. Hence, it follows that this very good pasture, producing as it does such excellent results in the way of fattening, is quite at fault when judged from MR. DE LAUNE's point of view. In fact, on the average of the eleven botanical examinations, this fine old pasture is found to yield more than four times as much rye-grass as it does of cocksfoot, meadow fescue, timothy, and meadow foxtail taken all together, and yet, according to MR. DE LAUNE, these four last-named species "should "form the bulk of all pastures on good soil." Taking the average of my own results, based on the examination of samples drawn from 25 pastures in 20 different counties of England and Ireland, I find that cocksfoot comes third and timothy sixth in order of abundance, whilst meadow fescue forms less than 1 per cent. of the total grasses, and foxtail

occupies a still more inferior position. On the other hand, the average quantity of rye-grass considerably exceeds that of all the other species of grass taken together. Consequently, when we apply Mr. DE LAUNE's test to these valuable old pastures we find they are all "wrong." Again, in my Paper, "The Herbage of Old Grass Lands," I have quoted the results of observations made *in situ* on five old Normandy pastures, by a distinguished French botanist, M. AMÉDÉE BOITEL. In every case rye-grass occupies a superior position to the four species which Mr. DE LAUNE asserts "should form the bulk of all pastures on good soil." In these five pastures, cocksfoot is noted as occurring in four, timothy and meadow foxtail each in one only, and meadow fescue is not mentioned at all. Hence, whether in the Leicestershire pasture, or in the old English and Irish pastures from which my own samples were drawn, or in the Normandy pastures, the general results, so far as the grasses in question are concerned, are identical; rye-grass leads the way, whilst the four other species, which according to Mr. DE LAUNE ought to predominate, yet do not, follow at a respectful distance.

A very noteworthy point concerning Mr. DE LAUNE's wholesale condemnation of rye-grass is that the sole experimental basis for his rejection of this species is founded upon the results obtained by himself on his own farm. But are the results of experiments conducted in one locality in Kent sufficient to justify the total exclusion of rye-grass from the practices of British husbandry? Accepting, as I most unreservedly do, the fact that Mr. DE LAUNE's experience of rye-grass was unfavourable, and that he succeeded in obtaining good pastures without using rye-grass seed, I nevertheless submit that this is no sufficient argument against the use of rye-grass elsewhere. To institute a parallel, it might similarly be said that whilst a very serviceable suit of clothes may be made out of Irish frieze, this is no argument against

the use of broadcloth. I had long thought, however, that Mr. DE LAUNE's description of his own experiments, and the means whereby he attained his results, was somewhat lacking in those details which would be most looked for by practical men. Referring to the success which attended the efforts of the late Mr. W. T. CARRINGTON in laying down land to permanent pasture near Uttoxeter, notwithstanding the "admixture of very considerable quantities of rye-grass," Mr. DE LAUNE observes (p. 259) that Mr. CARRINGTON's "pastures go far to prove that by means of an unlimited outlay in artificial manures, a small quantity of good seeds may not only be maintained, notwithstanding the deterioration of the soil by rye-grass, but may even be so strengthened and nourished as to gain in size and to tiller out and multiply to an extent sufficient to cover the ground previously occupied by the rye-grass or other temporary plants which, at the end of three or four years, have died out." Immediately afterwards, Mr. DE LAUNE states that "the object of his Paper is to demonstrate how permanent pastures of the best possible description can be formed economically and with a certainty that they will not die out or deteriorate at the end of four or five years, or at any future time when the heavy manuring is discontinued." In connection with these remarks it becomes interesting to learn the opinion of so sound an agriculturist as Mr. JAMES A. CAIRD, who, in his instructive Paper, "Recent Experiences in Laying down Land to Grass" ("Journal" of the Royal Agricultural Society, part i., 1888), gives us those practical details which Mr. DE LAUNE's Paper does not contain. Mr. CAIRD writes (p. 152) as follows:—

"Mr. C. DE L. FAUNCE DE LAUNE, at Sharsted Court, near Sittingbourne, in Kent, has lately converted a great portion of his estate into permanent pasture. The appearance of his grass-fields is simply magnificent; they appear

be full of manure, and full of growth. Everything has
 “been done to ensure success. Belts of timber have been
 “planted for shelter, and tall fences of hop-poles packed
 “with hop-bine have been erected for the same purpose—
 “protection from the cold winds off the North Sea being
 “very necessary. Watering-places are found in every en-
 “closure, the water being caught on roads and brought in
 “underground pipes to reservoirs connected with the drinking-
 “ponds. The timber used for gates, hurdles, and hop-poles
 “is all creosoted, and is almost imperishable. The land is
 “very heavily stocked with a breeding flock of Kentish
 “sheep; they have additional food of mangolds, thousand-
 “headed kale, and plenty of cake and corn; the green food
 “is usually consumed on the grass, and, with the cake and
 “corn, manures it very effectively.

“The grass is an accomplished fact; it is the most uni-
 “form rich green sward that can be imagined, but the cost
 “of obtaining it would have been unjustifiable had grass
 “been the only object in view. Mr. DE LAUNE, however,
 “is happily situated; his soil is good brick-earth above
 “chalk, and he is in the country where cherry orchards
 “abound. A great deal of the artificial feeding of the
 “sheep is for the benefit of the cherry-trees with which
 “nearly every grass-field is planted. There are patriarchal
 “old cherry-trees, with far-reaching branches, and there are
 “young cherry-trees with only a few twigs on the stem they
 “are grafted on; but all alike are flourishing, and all but
 “the old ones are carefully protected from the sheep by
 “ingenious little cages of creosoted gate-hurdles. With the
 “return that Mr. DE LAUNE is entitled to expect from his
 “cherry-trees when in full bearing, almost any expenditure
 “on fertilisers is warranted, and the grass shows the benefit
 “in the meantime.”

If I rightly interpret the description which Mr. CAIRD

has placed on record, it amounts to this: that the methods pursued by Mr. DE LAUNE in establishing permanent pasture without rye-grass, were of so costly a nature as to place them, for all practical purposes, outside the limits of ordinary and economical farming. It is easier, in the light of Mr. CAIRD's evidence, to understand Mr. DE LAUNE's concluding remarks, in which he says (p. 609):—"I wish especially to impress on my readers that the result of my experiments thus far has been that I have laid down to permanent pasture, without encountering the period of deterioration which has hitherto been the universal experience of farmers; but that, instead, my meadows have gone on from year to year improving and increasing in their productivity for breeding and fattening purposes." It is both fair and pertinent to inquire, At what cost?

It would be interesting to learn to what extent Mr. DE LAUNE's advice to rigidly exclude rye-grass seeds from all mixtures for permanent pasture has been followed, but the point would be a difficult one to get exact information upon. Still, a somewhat significant side-light is afforded in Mr. JAMES A. CAIRD's Paper which has just been referred to. A schedule of questions which Mr. CAIRD sent to a number of experienced agriculturists embraced an inquiry as to whether the seeds they employed in laying down land to pasture included rye-grass. I find that eighteen correspondents specifically replied to this question, and that only three of them answered it in the negative. Inasmuch as five or six years had elapsed between the publication of Mr. DE LAUNE's views on rye-grass and the appearance of Mr. CAIRD's Paper dealing, be it observed, with "recent" experiences in laying down land to grass, I venture to think that the result I have just mentioned is susceptible of an obvious interpretation.

In summarising his results, Mr. CAIRD writes:—

“The question as to the perennial nature of rye-grass cannot be said to be solved by these inquiries. The opinions are nearly equally divided. Some of my correspondents maintain that it dies out and utterly disappears in two or three years, while others believe either that it is perennial, or that it seeds itself and so continues. There is, however, a nearly unanimous testimony in favour of sowing it in various quantities in permanent grass mixtures, the object being apparently to secure a crop of some kind while the grasses of more tardy growth are developing.”

This seems an appropriate stage at which to give expression to a doubt which has for some time been exercising my mind. It turns upon the accuracy, upon the justification, of the very frequently-recurring phrase, “The rye-grass dies out.” What proof have we, in nine cases out of ten, that it is the rye-grass which thus disappears? Why are bare patches invariably attributed to the failure of the rye-grass, and never to that of any other species? Does it not seem somewhat anomalous that the species which has been proved to constitute the leading proportion of the grassy herbage of our fine old pastures should be the very one which, as is alleged, always dies out in our new ones? Might I go even a step farther and ask, Has it not become somewhat the fashion, when a blank space appears in newly-laid pasture, to say, “The rye-grass has died out”? There is much force in the saying, “Give a dog a bad name and hang him.”

It deserves to be noted that upon one or two points Mr. DE LAUNE and Mr. CARRUTHERS are scarcely in agreement. In the “Report of the Consulting Botanist on Laying down Land to Permanent Pasture” which appeared in the “Journal” of the Royal Agricultural Society for 1882, it is stated (p. 366):—“While annual grasses, or those having a short term of life, like the rye-grasses, may be specially

“fitted for alternate husbandry, it is obvious that permanent pasture should be formed by those grasses which have a perennial existence.” But I have previously quoted Mr. DE LAUNE as including rye-grass amongst “bad grasses and weeds,” as characterising it as one of “the worthless grasses which are disliked by stock,” and as stating that “the feeding qualities of rye-grass, as determined by chemical analysis, do not encourage its cultivation.” Why, then, should a grass, with so bad a character as is alleged, be “specially fitted for alternate husbandry?” In the same Report we read that the observations of Mr. DE LAUNE “show that the best permanent grasses are the five following species” — cocksfoot, timothy, meadow foxtail, meadow fescue, and tall fescue, and that “the real value of the pasture will depend upon the proportion of the five larger grasses which are found in it.” I have already shown how small, compared with the rye-grass, is the proportion of these five larger grasses in pastures whose feeding capacity is above reproach. It is likewise stated:—“It has long been noticed that some pastures which appear to consist of an abundant supply of good food are yet unable to fatten stock. This must limit the selection of the grasses to those which, by experiment and observation, have been found to be nutritious as well as palatable.” I venture, on this point, to suggest that I have brought forward sufficient evidence to prove that rye-grass is both nutritious and palatable.

What Continental observers say of rye-grass is not without interest. Of German authorities, Dr. STEBLER, of Zurich, is second to none, and in his work “Die besten Futterpflanzen” he states that, to form the rich and excellent pastures resting upon the flat alluvial soils of North Germany, experienced cultivators there commonly sow a mixture of rye-grass and white clover; he adds that it is

the grass best suited to the formation of a greensward. Leading French authorities—Vianne, Heuzé, Boitel—all agree in estimating rye-grass as a very useful species, worth sowing for meadows, and especially valuable for pastures. They all include it in the mixtures they recommend, and even advise the sowing of rye-grass and white clover alone as quite sufficient to make a good turf. A very eminent foreign authority, in a letter to me dated January 28th last, writes:—"I know such splendid carpets of turf composed " almost entirely of rye-grass, that I should consider it the " height of folly to discard such a grass."

I am aware that my own method of investigation is open to the objection that the turf, which I in each case employed, might not have been a fair representative of the entire pasture. Inquiries of this character must, however, even where the herbage is gathered *in situ*, always be liable to this objection, and the only way to meet it, and thereby to obtain trustworthy average results, is obvious. Either, as in the investigations by Sir JOHN LAWES and Dr. GILBERT, a number of samples of the same pasture should be taken at different periods in different years, or, as in my own inquiries, a number of turfs should be dug from various pastures in different localities. In both methods, each result thus acts as a check upon all the others, and the possibility of error is reduced to a minimum. I think it only fair to state that the results of my own investigations were actually in type before I knew anything of the nature of the investigations, much less of the results, of Sir JOHN LAWES and Dr. GILBERT. It is much more than a mere coincidence that the very feature which I had myself seized upon as constituting the main lesson taught by my own observations, namely, the prominent position occupied by rye-grass and white clover in our best old pastures, should be identically the same as that taught by the results so thoroughly estab-

lished by Sir JOHN LAWES and Dr. GILBERT. Hence, whatever may be the individual merit of either of the series of experiments—those of the Rothamsted investigators, and my own—from which I have drawn my facts, I submit that, on the main question at issue, the joint and mutually confirmatory evidence afforded by the two series of inquiries is far more valuable, far more trustworthy, and far more conclusive, than would have been the case had my arguments concerning rye-grass been based exclusively upon either the results obtained by Sir JOHN LAWES and Dr. GILBERT alone, or upon those obtained by myself alone. Though, in nearly every detail, the two methods of investigation differed from each other all along the line, they nevertheless give the same verdict respecting rye-grass, and indicate this species as occupying the premier position amongst the grasses of our best pastures.

As this Paper was already in type at the time, I can only make the briefest reference to Mr. DE LAUNE's letter which appeared in the *Times* of March 1st. In that communication Mr. DE LAUNE seeks to attribute to me certain extraordinary notions concerning the sowing of Yorkshire fog, buttercups, &c., for the production of permanent pasture! He does this by what he terms a "process of reasoning," but inasmuch as all his arguments are based upon an obvious misapprehension, it is needless to discuss them. As a matter of fact, Mr. DE LAUNE in his perusal of my Paper, "The Herbage of Old Grass Lands," has completely confused the distribution of species with the local abundance of individuals. The two things are, as every naturalist knows, widely different.

It is no part of my case to pronounce the panegyric of rye-grass, nor is it my intention to deprecate the use or depreciate the value of such species as cocksfoot, timothy, foxtail, and meadow fescue. I have, indeed, only referred to these latter in so far as Mr. DE LAUNE pointedly exalted

them above rye-grass, and thus contributed to the humiliation—if I may so express it—of the last-named species. And the reason I have dealt at so much length with Mr. DE LAUNE's recorded opinions is that Mr. CARRUTHERS's special reference to these as "the true views in regard to rye-grass" leaves me no alternative in the matter. The whole question at issue is one that depends upon facts and not upon opinions, and it has been my endeavour, in adopting the line of argument I have, to base my conclusions upon ascertained facts as determined by experiment and observation. I am not unmindful that even the appearance of rye-grass has been quoted against it, and that it has been contemned as "stiff and formal." To my eye rye-grass appears otherwise, and, as I see it, glossy, green, and graceful, contributing so large a share to our beautiful greenswards, tillering so freely amongst our pastoral herbage, and aiding to an extent that is hardly appreciated in the production of meat and milk, I feel that its extinction would be an irreparable loss to British husbandry. That it is perennial upon all soils, and that it will thrive everywhere, I do not argue, for I know no grass, nor even any plant, of which this can be said. Nor, indeed, do I know of any grass that has been subjected to the light of so fierce a criticism as has beaten upon rye-grass within the present decade.

I have endeavoured to deal with this controversial subject in the same friendly spirit as actuated Mr. CARRUTHERS in his Address of December 12th last, and I hope I have not been unsuccessful. The Papers of Mr. DE LAUNE, published in 1882, and supported then and since, in their attacks upon rye-grass, by Mr. CARRUTHERS, constituted virtually the challenge I was called upon to accept. The subject is of so much economic importance that I am glad to have had the opportunity of bringing it before so experi-

enced a body of practical agriculturists. In conclusion, I would ask whether the time has not come for the withdrawal of the wholesale denunciation which was uttered against rye-grass on high authority in 1882. Is it not possible to review the whole position and to moderate the anathema? In other words, ought not rye-grass to be removed from the *Index Expurgatorius* of British agriculture?

Mr. W. J. BEADEL, M.P. (Past-President), had great pleasure in proposing a vote of thanks to Dr. FREAM for his able Paper, which was certainly not the least interesting of the many valuable Papers in the "Transactions" of the Institution. In the present troublous agricultural times, the question of permanent pastures came up very prominently before all who had anything to do with the landed interests of this country, and it was of the utmost importance that such persons should be guided by those who were experienced as to the way that permanent pastures should be laid down so as to secure satisfactory results. He was bound to say that the reader of the Paper had unsparingly attacked his adversary—using the word "attacked" in a perfectly good-natured sense,—and had given his reasons in a frank, open, and careful manner, leaving his hearers to form their own conclusions. Although he (Mr. BEADEL) was an agriculturist of a great many years' experience, he felt the difficulty expressed in the old adage, "Who shall decide when doctors disagree," and when two gentlemen, each competent to speak with great authority, differed so diametrically—one arguing that rye-grass was a panacea for almost all the ills complained of, the other describing it as a weed, and the most horrible thing that could be grown,—what was the agriculturist to do? He supposed he would be told to exercise his common sense. He (Mr. BEADEL) was bound, however, to say, that Dr. FREAM's arguments had convinced

him that rye-grass scarcely deserved the sweeping condemnation which had been bestowed upon it by Mr. FAUNCE DE LAUNE.

The Paper would, he thought, cause fresh attention to be given to the subject and further experiments to be made. Nothing could be fairer than the experiments made by Dr. FREAM, and no experiments could be better calculated to elucidate the truth. He regretted, however, that Dr. FREAM had not thought it necessary to take a specimen of the best turf in Essex, where he would probably have found something bearing on the question of the desirability of rye-grass. Where land was put down to grass for a year or two on what were called the short leys, the almost invariable practice was to sow some Italian rye-grass with white clover and trefoil, and nothing could be better to lay down for one or two years.

Whether rye-grass was, as Mr. DE LAUNE had said, a plant which could only live by seeding, or whether, as Dr. FREAM had said, it was the first that cattle would eat, and so sweet and attractive to them that it consequently never had the chance of seeding, was a matter for investigation later on. But, however that might be, he would like to urge upon Dr. FREAM and others who were interested in this question, the great importance of the seeds which were sown being of a quality which would benefit those who sowed them. On this point he spoke from experience. Within the last few years he had had seeds from two firms of seed-merchants. In one case an excellent and apparently permanent pasture was formed. In the other case (he did not think it fair to give the names) there was no prospect of a permanent pasture, as far as he could see, and the thirty shillings or so per acre which had been charged for the seed was absolutely thrown away; and he had no doubt that the experience of others present would lead them to agree with him that this

question of the purity of seeds was of the utmost importance to farmers.

Sir H. E. CARTWRIGHT (Fellow) considered the Paper extremely opportune, and believed that the arguments which had been so ably brought forward by Dr. FREAM would be of the greatest value in inducing agriculturists to pay more attention to a plant against which there had been, as he believed, an entirely erroneous opposition. He had to deal, about 10 years ago, with some old pasture which had been laid down in 1815, and which he thought would be improved by the addition of new life. He was told that if he planted rye-grass it would utterly destroy the old pasture. He had observed, however, that the rye-grass plant had the habit of what is called in America "rattooning"—that if it were cut down and not allowed to seed, and so spend its strength, it would become permanent. Notwithstanding the advice he received, he sowed the land in question with rye-grass and white clover, and from that time it had become a most valuable and productive pasture. So far from cattle disliking it they were most greedy for it, and the plant was one containing, as he considered, the greatest amount of nutrition of all the grasses. In the north of Ireland, where he had tried the experiment, rye-grass had become a most valuable aid to the farmers. The great demand for the seed in the prairies of America and New Zealand had given the farmers an additional crop, which they could interpose between the old rotation of crops, and which gave a very good return. Of course, where the rye-grass was grown with the object of taking away seed and using it as a rotation crop, there was, he presumed, a great likelihood of the plants dying out. The hay, too, of rye-grass contained a very large amount of nutriment.

In the district to which he had referred rye-grass seed had

now become a staple product, and the price was as high as 4s. 6d. to 6s. 6d. per bushel, according to quality. He believed, however, there were gentlemen present who held opinions on the subject contrary to those of Dr. FREAM; and, the matter being one of such very great consequence, he felt that it would be most useful to have the views of both sides.

Mr. H. E. RAYNBIRD (Fellow) wished to say a few words from the farmers' and seed-merchants' point of view. The subject was of the greatest importance, because, inasmuch as agriculture was largely dependent upon the improvement of breeds of cattle, it was also dependent for its success on improvements in the feeding plants grown; and, of course, to be successful, farmers must only grow those plants which yielded the best return. His own experience confirmed much of what Dr. FREAM had so well advanced. The quantity of rye-grass sold was now, and had been for very many years, greater than that of all other grasses put together. This was a fact worthy of consideration.

Then, too, the fact should not be lost sight of that there was rye-grass *and* rye-grass. There was what was called in the North "annual rye-grass," and what was called in his own county "Hampshire rye-grass." This was looked upon as an annual plant, but, though it was expected to die down after the first cutting, it would sometimes last more than one year. Then there was another rye-grass in the south of England known as "evergreen rye-grass," which was found in the meadows to be a perennial, like the fescue-grass and the cocksfoot, and which flourished well not only for one year, but for many years in succession. Another variety, which was of more importance than any of the others, had been referred to by Mr. BEADEL—the Italian rye-grass—which would produce nutritious food in all seasons, in the

winter and in the heat of summer, to a greater extent than any of the other cultivated grasses.

But there was another point of view from which to consider this subject, and that was the question of return for what was grown. On this question he would point to the contracts made at Aldershot and elsewhere for hay. It would be found that at Aldershot, and in the London markets, rye-grass, with a slight admixture of clover, would command a considerably higher price per ton than could possibly be obtained for hay composed of timothy or cocksfoot, or even of meadow fescue. While the former was in demand at a good price, the latter was frequently almost unsaleable. Timothy hay and cocksfoot hay would hardly be looked at in the London market, and if sent to Aldershot would be likely to be rejected. The article which Mr. DE LAUNE wrote six years ago had produced an adverse effect on the demand for rye-grass; but he thought opinion was now turning the other way.

Mr. W. CARRUTHERS, F.R.S. (Visitor), agreed with the previous speakers that Dr. FREAM's Paper had dealt worthily with a question deserving the most careful consideration. He valued highly the careful experiments and observations made by Dr. FREAM, although he did not accept in all their fulness the conclusions drawn from them. It was now a good many years since his attention had been directed to the question of rye-grass in connection with the laying down of permanent pasture. He thought it extremely important that Members of The Surveyors' Institution should realise that there were two questions to be considered—the question of producing permanent pasture and the question of the nature of old and existing pastures. The question how best to produce a permanent pasture had been a burning one for many years; and when he first undertook the investigation

of the matter he found that the universal testimony of farmers against the laying down of pasture was that, no matter how good the pasture was when first laid down, it began, after four or five years, to deteriorate, and gradually disappeared. How to remedy this evil was the problem placed before him, and he came to the conclusion that those plants which were truly perennial were the plants best calculated to give a permanent pasture. He then noted the duration of life of the various ingredients of different pastures, and became convinced, alike by observation and experiment, and by the testimony of others, that rye-grass was a short-lived plant. He had never said that rye-grass was an annual plant, but Mr. RAYNBIRD had just spoken of an annual rye-grass. He would like the Members present to realise that there were only two cultivated species of rye-grass in England, and just as it was impossible to make an annual plant like wheat perennial, so was it impossible to make an annual rye-grass perennial, except under conditions of which he would speak presently. He did not believe that there was an annual rye-grass. He believed that the grass represented in some catalogues as annual rye-grass was true *Lolium perenne*. The other rye-grass was *Lolium italicum*, an annual rye-grass. He thought that Mr. RAYNBIRD's testimony, that there was, a very great admission, and he was sure his friend Dr. FREAM would allow that this annual rye-grass was only *Lolium perenne*, the true perennial rye-grass.

The result of the investigations to which he had referred was that he had recommended the laying down of pastures without rye-grass, and he was quite sure that no one could contradict him when he said that in every case where the perennial plants were employed for laying down pastures there had not been a single case of failure after four or five years, but that in every case the permanent pastures had

gone on improving, year after year, to the present time—that is, for ten, twelve, or fourteen years. He thought that was quite sufficient to show that rye-grass, as a grass for laying down permanent pasture, must be looked upon with the very gravest suspicion. He was sorry to hear that so much rye-grass still went into the market for permanent pasture. From the pastures which he had recommended to be laid down rye-grass was excluded, and only those grasses employed which the systematic botanist and agriculturist equally acknowledged to be perennial plants.

He would point out one or two facts about rye-grass. He had not spoken against rye-grass in rotation cultivation, and he thought the statement which he (Mr. CARRUTHERS) had made about the use of rye-grass in rotation cultivation should not be put as if it were opposed to the statement made by Mr. DE LAUNE as to its use in connection with permanent pasture. The two things must be distinguished. A plant which was perennial would be a weed in rotation crops, because it would be extremely difficult to get rid of it in the succeeding crop; but a short-lived plant could be easily cleared out, and for this reason was of the first importance in such crops. He had always advocated the use of rye-grass as the very best grass for a rotation crop, and that testimony could not be set aside by the statements of Mr. DE LAUNE when speaking of it for another purpose—that of permanent pasture, which he (Mr. CARRUTHERS) was satisfied it was not fit for. With regard to the value of rye-grass in hay, it certainly looked uncommonly well to the purchaser. But what did the animal that had no choice, and was compelled to eat it, think of it? It was impossible to tell. The appreciation of rye-grass by stock could be better judged by testing it in the field among other grasses, where the animal had a choice. For his part he was prepared to stake his reputation as an observer on the statement, that stock

would not select rye-grass if they had other grass alongside of it to feed upon, and that, in these circumstances, it was usually left both by sheep and cattle.

He had just now said that there were certain conditions under which an annual plant might be made to grow like a perennial. The object of an annual plant was to produce its seed, and if it could be prevented from doing this it could be kept living for some years. Many present knew that mignonette, which was an annual plant, by being prevented from seeding, could be developed into a bush of considerable size. He had seen one standing two or three feet high. In the same way rye-grass or wheat or oats could be made perennial plants. Now, in the case of a pasture, mainly of rye-grass, on which the stock must find its feed, of course they would eat it down, and the short-lived grass would be made perennial, by not being allowed to seed. On the other hand, in a pasture with a sufficient amount of other good feed, the rye-grass would be left, and it would be found that it increased itself by seeding: he believed this to be the explanation of the existence of rye-grass in so many rich pastures. If rye-grass were eliminated and the other grasses encouraged, there would be found far better pastures than even these spoken of this evening. The fact was that the plants rejected by the stock—the buttercup, cerastium, and other things that Dr. FREAM found in his pastures, seeded and reproduced themselves. He remembered very well an ancient pasture which on being allowed to go to hay appeared to be one continuous sheet of Yorkshire fog. What was the explanation of it? Simply this. The stock rejected the Yorkshire fog, which seeded and went on multiplying until it took possession of the field and left scarcely anything else in it. It was obvious that, if there were put into the mixture for sowing, seeds which would produce grasses not liked by stock, these would go on increasing and

increasing until they became the predominant grass of the field. He had seen a field last autumn which had been laid down with a mixture which he had recommended, but into which, unhappily, as he thought, some dogstail had been put. This dogstail was rejected, as it always was, by the stock, so that, at the time he saw it, it covered the field with dry bents and seemed to be the only grass that was living in the field. The fact was that sheep had been upon that field and had eaten everything else down, and the dogstail was thus left to bear seed and so to reproduce itself. He would have liked to go more elaborately into the matter, but did not think he ought to trespass further upon the time of the Meeting. He must say, however, that he was much surprised at the testimony which Dr. FREAM had brought forward with regard to the length of the roots of rye-grass. It seemed to him (Mr. CARRUTHERS) that the extract read by Dr. FREAM from Sir JOHN LAWES, Dr. GILBERT, and Dr. MASTERS, entirely supported the view that it was a short grass, and he could not understand how Dr. FREAM could hold, and that in the presence of those well acquainted with this grass, that it was not a shallow-rooted plant. It had an abundance of minute fibres, which never penetrated to any depth in the soil, and which, consequently, derived their nourishment from the superficial layer, and thoroughly impoverished that layer. It would, he thought, be an extremely instructive experiment to put alongside each other a piece of pasture, composed of such grasses as Mr. DE LAUNE recommended, and another sown only with rye-grass; and he would add that the experiments which were being made at the Royal Agricultural Society's farm at Woburn confirmed, so far as they had gone, the view that rye-grass was a short-lived plant. From the study of the life of the plant, from observation of what had been already done in the experiments which had been instituted

all over the country in laying down pasture, he was more and more convinced that every grain of rye-grass which was put into a mixture for permanent pasture was an injury to that pasture.

Colonel G. W. RAIKES (Fellow) would like to put on record his own practical experience, which, he must say, agreed in the main with that of Mr. DE LAUNE.

It was, perhaps, rather a bold proceeding on his part to advocate a system which had received so little support from speakers of great experience, but he had laid down many hundreds of acres of land with grass in the last ten years, and, ever since Mr. DE LAUNE'S Paper appeared, had left rye-grass altogether out of his mixtures; but he would be happy to convince anyone who would travel as far as Warwickshire that the pastures which had been planted without rye-grass had overtaken and surpassed those that were planted before them with rye-grass on similar land. His opinion was that rye-grass was a good servant, but a very bad master.

It must be kept in its place, and its habits must be understood. If the object were to get a large quantity of feed quickly and cheaply, one could not do better than plant rye-grass, and force it on with artificial or other manures. But, having thus obtained a good sward, great care must be taken to get it fed off before it seeded. His experience was that, if rye-grass on any soil was allowed to seed, it impoverished the land to a very great extent. He had proved this fact, as anyone who was about sowing seeds could prove it. If, when planting a clover field in rotation, one half of it were planted with rye-grass and the other half without, and the whole field were treated in the same way, then, whether it was mown or whether it was fed, there would, unless he was very much mistaken, be a

better crop of corn next year where the clover was planted alone than where the rye-grass was planted with it.

It had been said by some of the speakers that cattle were very fond of rye-grass, and would pick it out, while other speakers had said that cattle and sheep avoided it. His experience was that, if the rye-grass got into bents after Midsummer, it was very difficult to get it fed down, and, in the case of the young pastures which he had planted before giving up sowing with rye-grass, he had had frequent occasion to brush them over with the scythe, in order to get rid of the bents before the winter. His experience had been on a very large tract of land principally composed of that most difficult soil to deal with—the blue lias clay of the midland counties.

Mr. W. ASHCROFT (Visitor) said that his observations would be confined to the use of rye-grass in pasture on what might be called the upland soil overlying the chalk; not on the chalk, the soil being more or less comprised of sandy clay or stony loam, with some eight or ten feet of drift between it and the chalk. The permanent pastures on these uplands, which lay some 400 or 500 feet above sea level, had been down, say, 40 or 50 years.

As the result of observation he had come to the conclusion that, if these pastures did not grow a very large quantity of rye-grass, he would have very little feed for his stock in the early part of the summer, because the bulk of the feed for the early part of the summer on these fields was almost entirely composed of rye-grass. The soil was not good enough to grow foxtail, and one found very little, in fact, no foxtail, on the pastures, but the main feed, and that at a time when cattle or cows always did best, was rye-grass. Afterwards came dogstail and cocksfoot in much lesser proportion, timothy-grass, with some of the fescues; but the chief

profit of the field, from the end of May or the beginning of June, was chiefly due to rye-grass, thanks to its early habit. Call it a perennial or call it an annual, it still continued to flourish, and it always furnished the bulk of the feed at the time when cows or beasts were doing their best. That would, perhaps, be taken as sufficient testimony that rye-grass was a very nutritious grass—a grass very well adapted to some soils, and more particularly to those soils which were not strong enough or good enough to grow foxtail. Rye-grass had strong merits in a permanent pasture, owing to the fact that in cold, high, and exposed situations it was an early grass.

Colonel A. S. JONES, V.C. (Visitor), said he was very glad to find that there was a chance of rye-grass regaining its old character. He had always believed that it afforded the largest amount of early feed, and, where well furnished with manure, would continue that large supply from March to November. He found it very hardy, and believed the difference of opinion with regard to its being rejected by stock arose from the want of plenty of manure. It was greedy for manure, and, if not supplied with sufficient, it was apt to get into hard bents which the cattle were obliged to neglect. That accounted for the different opinions expressed on this point. His experience was that horses, cattle, and sheep were very greedy after rye-grass. He had fed horses as long as 18 years continuously on rye-grass—rye-grass hay in winter, and the green grass from May to November; and better-conditioned horses were not to be seen during the whole period. As to permanent pasture, he had laid down a field, since Mr. DE LAUNE wrote his Paper, including rye-grass, and he must say he had a very good crop upon it; but he thought a certain amount of rye-grass had remained in the soil, for he had found, even after ploughing a field of it, that it would come

again, and, as he thought, independently of the seed. He was quite sure that on sewage farms Italian rye-grass was of the greatest value, and it was only necessary to observe the greenness of the land under rye-grass to see its advantage.

Dr. J. A. VOELCKER (Visitor) said that he had not the advantage of being able to speak authoritatively either on the botanical side or on that of the practical farmer, he being recognised fully by neither one nor the other. Still he was gaining experience with years, and, in the experiments which he and Mr. CARRUTHERS were carrying on together, he had learned much, though he freely admitted he was still in the learner's stage. There was, however, one point which he ought, perhaps, to know something about, and that was with regard to the question of the nutritive value of rye-grass. Here the adage quoted by Mr. BEADEL did not apply, for the doctors did not on that one point disagree. He had taken the trouble, besides referring to his own investigations with regard to the chemical analysis of different grasses, to look up the records, and he held in his hand one of his father's, as long ago as 1856, in which rye-grass was placed first on the list of those grasses the nutritive quality of which was undoubted. He did not wish them, however, to place too much value on chemical analysis, much as he might naturally be disposed to exalt it. There were conditions under which some grasses would turn out well, and others in which they would not; and to pin one's faith to a particular analysis of a particular sample was decidedly unwise. Indeed, chemists themselves did not know anything too much of what were the real constituents which determined the value of different grasses. Still, from what knowledge they had, it was very clear that there was no case to be made out, as Mr. DE LAUNE had done, against the nutritive value of rye-grass as compared with other grasses. Mr. DE LAUNE's opinion was based, he

had reason to believe, on two particular samples of rye-grass and another grass; but this could not afford a fair comparison, unless one knew all the circumstances under which they were grown. He thought it right, however, to bear in mind that to Mr. DE LAUNE was due very great credit indeed, for the energy which he had displayed in the whole question in bringing it before public notice, and for the great service he had rendered to agriculturists generally by securing to them a far better supply of seeds through seed-merchants than would otherwise have been the case. To Dr. FREAM also, for his laborious investigations, those who were engaged in anything of the kind would know only too well the obligation they were under.

But, with regard to the charges against rye-grass, it had been said that it was short-lived, that it was a surface-feeder, and that only under certain conditions did it become perennial. He thought it was a matter which everyone should carefully inquire into in some such way as had been suggested—laying down pieces side by side and watching the results. Still, it must be granted for Dr. FREAM, and the case he had made out in favour of rye-grass, that, if he had brought statistics from so many different places and so many parts of England, and it was found that in the acknowledged best pastures in England rye-grass predominated to such an extent, the farmer must be given something better before he was asked to give it up. The farmer might well say, “Let me have my rye-grass and leave it to me to make it perennial, or to let it seed and come up again; but do not take it away until you give me something in place of it.” It was almost inconceivable to him (Dr. VOELCKER) that rye-grass could exist to such an extent in pastures recognised to be good, and be simply there as the result of a chance conversion from an annual into a perennial, or of seeding, in consequence of its being rejected by stock. Surely these pastures would soon lose their

reputation for value if the case against rye-grass was as strong as it had been made out to be.

To Dr. FREAM's method there had been many objections raised, and, he thought, with some reason. The method of cutting out a mass of turf to only the depth of nine inches (though this depth might be said to be sufficient, and more than necessary), in view of a discussion of this kind, needed, he thought, further investigation. As an illustration of this he might mention that in the case of wheat grown at Woburn he had found the roots as much as forty inches down, and when he came to examine the lower strata he would probably find minute rootlets very much deeper down even than that. In the case of deeprooted-plants, like clover, it was found that the analysis of the top surface threw no light whatever on the source from which they drew their nourishment, and what kind of nourishment it was. The question, therefore, must not be left out of sight in dealing with such deep-rooted plants as clover and others, which were known to go down very deep, whether their life was not affected in some way by the cutting of the roots short at the depth of nine inches.

He would suggest, also, to Dr. FREAM that if he simply cut out a block, as he had done, and analysed the whole of the surface of that block, there must be inaccuracies—which might, indeed, be considerable—owing to the destruction of the plants at the edges. He would suggest, therefore, the taking of a larger surface, and marking out a sufficient piece from that, and then only regarding that central portion, and not the disturbed portion at the sides. In this way, he thought, much better results would be attained. Yet, as he had said, one could not shut one's eyes to the general point which had been brought out in the investigation. There was, however, the unfortunate portion which Mr. DE LAUNE had referred to, viz., "miscellaneous herbage," and when it was found, as in Dr. FREAM's experiments, that

a case was mentioned where two weeds, either plantain or hawkbit, covered the whole plot, it was clear that there was still a great deal of room for closer investigation before proceeding to define accurately the percentage of these different plants which existed on the plots, and therefore he could only consider Dr. FREAM's results as broadly, and not as minutely, accurate.

He would not, at the present stage, speak much about the Woburn experiments, but merely give his own opinion, which he must say did not quite coincide with that of his colleague with whom he was carrying on the experiments. He had been watching the experiments with great care. The seeds were absolutely pure, and the plots were laid down side by side, but the differences were such that he thought it would be unfair to base any conclusions upon results given at the end of so short a period as three or four years. But this he might say, going over them with the eye, not of a scientific inquirer, but of a practical farmer (which he was trying to develop into), that there was no comparison between the look of the two, and, if one took a practical farmer over them, there was very little doubt as to which of them he would choose, judging from the results so far.

That one could lay down pasture without having recourse to rye-grass, and that it might be very good pasture indeed, could not, he thought, be doubted; or that cocksfoot, which Mr. DE LAUNE so much applauded, while it might in his pastures, by being well eaten down by sheep, prove most valuable, would, under other circumstances, in other parts of the country, become far too predominant and far too coarse to have the value that other grasses might possess.

On the motion of Mr. D. WATNEY, the further discussion of the Paper was then adjourned to the next Meeting.

AT

THE ORDINARY GENERAL MEETING,

Held on Monday, March 18th, 1889.

MR. ELIAS PITTS SQUAREY (PRESIDENT) IN THE CHAIR.

The adjourned discussion on the Paper entitled "The Facts about Rye-grass as determined by Experiment," read at the last Meeting by Dr. W. FREAM (Associate), was resumed by

Mr. D. WATNEY (Fellow), who said that he proposed to confine his remarks exclusively to the perennial rye-grass, without saying anything about the Italian rye-grass or the annual rye-grass. On page 307 Mr. CARRUTHERS had observed that there were two questions to be considered by the Members of the Institution—"one, the question of producing permanent pasture, and the other, the question of the nature of old and existing pastures." He (Mr. WATNEY) did not pretend on this occasion to discuss the question of the nature of old and existing pastures. That was a matter which he left to those who from observation and experiment would be able to speak with much more authority on the point than he could do. He would confine himself to the question whether *Lolium perenne* should or should not be used in mixtures for laying down land for permanent grass, which was, he thought, the point which the Members of the Institution were more directly interested in. On this question, while Dr. FREAM and Sir JOHN LAWES were of one opinion, Mr. CARRUTHERS and Mr. FAUNCE DE LAUNE took exactly the opposite view, and he believed, when the experiments of both sides were fully carried out, many new

facts would be gleaned which would be of great benefit to those interested in the management of estates.

He did not agree with what Dr. FREAM said on the first page of his Paper:—"In laying land down to permanent pasture, the object which every cultivator has had in view, and the goal, presumably, at which he hoped he should arrive, has been the establishment of grass land comparable with the fine old feeding pastures which constitute so valuable a feature of the surface of Great Britain and Ireland." Speaking for himself he might say that the object which he had had in view for the last fifteen years had been to improve poor soils, which grew from three to seven sacks of wheat to the acre, to avoid very large outlay in manual and horse labour, and to form, if possible, a pasture which would keep a lot of young stock in the summer-time. In support of this statement he was sure he would be confirmed by every land-agent in the room, when he said that he could now let farms which had a large proportion of grass while strictly arable farms were very much more difficult to dispose of.

The question then arose, What was the nature of perennial rye-grass? It was not a deep-rooted plant, and it might also be taken for granted that it was a plant with very fibrous roots, and that it was the first grass to start in the spring. It was also clear, after what Dr. VOELCKER had said, that its nutritive quality was the first on the list of all the grasses. He considered these to be very strong points in favour of perennial rye-grass.

He had laid down many hundreds of acres during the last 15 years, and had sown the seed at all times between the end of March and the end of September (he had, in fact, on one occasion sown in October), and he had sown with a crop and without a crop. He had tried a variety of mixtures from all the best seedsmen, and, after all, was doubt-

ful whether any general rule could be laid down as to which time of the year was the best for sowing, or whether it was better to sow with or without a crop. There were so many other circumstances to be taken into account that what was a successful course one year might, in the following year, end in failure. He had found as good a mixture as any to be 28 lbs., or one bushel, of light grass-seeds, and 12 lbs. of clover or other heavy seeds, to the acre, and out of that 28 lbs. of light grass-seeds he had used 12 lbs. of perennial rye-grass, and, after 15 years' experience of the use of rye-grass, he was very well satisfied with the results.

He had very carefully read the Paper, and the correspondence which had appeared in the daily press for some time past, and also the papers published by the Royal Agricultural Society. He had, in fact, read all he could find written on the subject; and, looking at it from an impartial point of view—and he believed he was not prejudiced at all, for he simply wanted to learn—he was decidedly of opinion that Dr. FREAM had proved conclusively that perennial rye-grass is one of the most valuable seeds in laying down land to permanent pasture; but that Mr. DE LAUNE had also proved conclusively that land might be laid down and a very luxuriant pasture formed without any rye-grass at all.

He was quite sure everyone in the room would agree that when laying down land it was essential to study and ascertain very carefully the nature of the soil, the former crops, and the manure which had been applied to the piece of land to be dealt with. Great care should be taken in preparing the seed-bed and in sowing. If care were not taken in all the details of laying down land it had much better be left alone, but the most important element of success, or one of the most important, was the after treatment of the land. If the after treatment was wrong good results could not be expected. Mr. CARRUTHERS had said, on page

308, that "he found the universal testimony of farmers against " the laying down of pasture was that, no matter how good " the pasture was when first laid down, it began, after four " or five years, to deteriorate, and gradually disappeared." He would not waste time in describing well-known processes, but in his opinion all newly-laid-down land should be mown the first year, and there was no doubt whatever it should be fed the 2nd, 3rd, and 4th years with young stock eating cotton-cake, and should be manured every autumn with something—it did not much matter what—but lime and mould or dissolved bones were as good as anything for the purpose. He thought dung and mould was, if a good coating were given, almost equal to dung. He did not approve of giving too strong doses, but thought it better to apply it frequently. He could quite corroborate the statements of Sir JOHN LAWES (quoted on page 288), for, nine years ago, he (Mr. WATNEY) had an arable field adjoining a pasture field. He laid down the arable field and grubbed the hedge, and the two had been together ever since. He believed that, out of the nine years, it had been fed seven, and, while there was always a quantity of long grass left in the old pasture, the new one was eaten almost bare. That showed that carefully-selected grasses were even better than those which grew wild, especially on poor land.

On page 299 Mr. FAUNCE DE LAUNE's opinion was quoted:—"It has long been noticed that some pastures, " which appear to consist of an abundant supply of good " food, are yet unable to fatten stock," and the deduction drawn from this was, that there were not proper grasses in such pastures, but he (Mr. WATNEY) had a great deal of land where the grass was uncommonly good, though he could not fatten a bullock on it.

In the case of land which, in old times, used to grow

three to seven sacks of wheat to the acre, and was not worth more than 20s., and which, in these present times, would let at about 11s. or 12s., one did not expect to get first-class pasture. To make *good feeding land* of this, notwithstanding that Mr. DE LAUNE seemed to intimate that he could do so, was practically impossible.

He must also join issue with Mr. DE LAUNE on another point. In his (Mr. WATNEY's) opinion, the end which land-agents had to aim at was to get the laying-down done efficiently, and at the same time with economy—that is to say, not extravagantly. Now, Mr. FAUNCE DE LAUNE's case was not, he thought, a fair one, for Mr. CAIRD (quoted on page 296) said :—“The grass is an accomplished fact; it is the most uniform rich green sward that can be imagined, but the cost of obtaining it would have been unjustifiable had grass been the only object in view. . . . A great deal of the artificial feeding of the sheep is for the benefit of the cherry-trees with which nearly every grass-field is planted.”

Then, later on, Mr. CAIRD said :—“With the return that Mr. DE LAUNE is entitled to expect from his cherry-trees when in full bearing, almost any expenditure on fertilisers is warranted, and the grass shows the benefit in the meantime.” That showed, to his mind, that Mr. DE LAUNE's experiments were not such as land-agents would be likely to adopt as their guide in the management of estates, which was, after all, the practical point to be considered.

In conclusion, he would quote the words of Sir JOHN LAWES, in a letter written the other day, with which he (Mr. WATNEY) entirely agreed :—“Our experimental grass, which has always been mown for hay once a year since 1875—often twice—does not help us much in regard to this question of rye-grass. It has almost entirely disappeared from all the spots,

“ as also has white clover. It is easy to see why the best
 “ fattening pastures are never mown. We have, however,
 “ much yet to learn as to the conditions of soil and climate
 “ under which any particular grass may have good or bad
 “ feeding qualities, and, until we know more on the subject
 “ than we do at present, it seems to me desirable not to spend
 “ too much money on the more costly seeds, and to bear in
 “ mind that, whatever seed be sown, it is the conditions and
 “ the after treatment that to a very great extent determine
 “ the character of the herbage.”

Mr. C. H. SHARMAN (Visitor) said he should have hesitated to join in the discussion but for the fact that, since Mr. FAUNCE DE LAUNE'S ideas were first promulgated, seedsmen generally had been very greatly interested in this particular subject, and it was found that the majority of farmers now evinced a tendency to select mixtures without rye-grass. It was his experience that the great proportion of those who had been laying down land to grass had followed the advice contained in Mr. DE LAUNE'S Paper, and in so doing had, in the opinion of himself and the firm with which he was connected (Messrs. CARTER), very frequently expended more in producing the desired result than if they had had recourse to the old mixtures.

Since the value of rye-grass was first questioned he believed seedsmen had endeavoured, where their advice was sought, to supply the sower with such seed as was suitable to his actual conditions of working ; that is to say, if a farmer put his facts fairly before them, stating the nature of his land, they endeavoured to suggest the best mixtures, whether with rye-grass or without, according to the condition of the land.

But the fact must not be forgotten that the conditions under which Mr. DE LAUNE farmed were peculiar. Those

who had the opportunity of seeing his cultivation and his method of farming knew that Mr. DE LAUNE, as a rule, had no other kind of live stock upon his land than sheep. The land was also of a peculiar character. Now, for sheep-farming, he took it (and he believed that Mr. WATNEY would support him in this) that rye-grass would not be a necessary, or even perhaps a desirable, grass to use. But many farmers and agriculturists, in laying down land, wanted to produce a mixed herbage for feeding mixed stock, or for grazing horses, and experience went to show that for horses rye-grass was essential. The instructions of Mr. SMITH, the Duke of HAMILTON's agent, in ordering seeds, were always "Be sure and put plenty of rye-grass, because "our young horses will leave everything else to go to the rye-grass and eat it." It was obvious, therefore, that the circumstances of each case should be considered, and that it was impossible to draw a hard-and-fast line as to whether rye-grass should or should not be used. But general experience led one to recommend its adoption rather than its absolute exclusion.

He thought it should also be remembered that many farmers—unlike Mr. DE LAUNE—had but a very limited purse on which to draw, and thus found it necessary to produce an immediate or early return from their land. Under such circumstances the addition of rye-grass would be beneficial. It gave the farmer, at any rate in the first few years of the crop, a heavier quantity of grass per acre than he would otherwise get. Again, in Scotland and in Ireland, where the land is not frequently laid down for an unlimited period, rye-grass was very largely used, and the rye-grass hay of Scotland and of Ireland was not considered inferior to that of any other part of the British Isles.

There was no doubt that some years ago a great deal too much rye-grass was frequently used, as he thought every-

one would admit who had experience of the subject. That was, however, largely brought about by the demand that has always existed, and he supposed always would exist, for a low-priced article, and now perhaps more than ever the farmer had to consider the price of his seed, and was disposed to ask for the cheapest, although it necessarily contained more rye-grass than is desirable. In order to keep pace with the advance made by such authorities as Mr. DE LAUNE and Dr. FREAM, responsible seedsmen had been, themselves, forced to become scientific, and to consider this subject with a great deal more attention than they had hitherto done, and it certainly seemed remarkable how very little knowledge the average agriculturist has upon the question, and what curious suggestions and inquiries he will make as to what should be done with regard to rye-grass and other matters of that sort, and how little, after all, he will adopt the advice of those whose experience enables them to speak with weight, but generally carries out his own preconceived ideas.

The question with regard to the distinction between annual and perennial rye-grass was, he thought, hardly one that would bear discussion. From experiments that he had made, extending over a number of years, he could find no actual difference between them. On communicating with the Scotch houses, who dealt more particularly with rye-grass, he had had a conflict of opinions in reply. One house would say there was a distinct and specific annual rye-grass as opposed to the perennial rye-grass, another that no such thing existed, and that one was really the same thing as the other. He himself thought that no real distinction could be drawn between the annual and the perennial rye-grass beyond the ordinary trade distinctions which were made more to meet the local definitions of the same article in different districts of the country. Of course one was

used as an annual grass largely—that was to say, it was sown for alternate cropping, to last perhaps one or two years; and hence probably the derivation of the name rather than from its actual period of existence. That rye-grass would stand for a great many years, or at any rate sufficiently long to justify its general use in pastures, was, he thought, borne out by the reports that seedsmen received at different times. He had seen lands sown with grass 10 or 15 years ago, and certainly at that time containing the average quantity of rye-grass; and the farmers were writing in the present year to say that these pastures were everything that could be desired. Whether the rye-grass had gradually disappeared, and whether its place had been taken by some of the other grasses, was not stated: it was probably the case that the rye-grass was still there. It was rather remarkable how long this question of rye-grass or no rye-grass had been before the agricultural mind; and, from a reference to books published as far back as the beginning of the present century, the merits of rye-grass appeared to be the subject of discussion then as it was now, and no one seemed able to arrive at a solid and sound judgment as to whether the grass should be cultivated generally or not. For instance, in CURTIS' book upon grasses it was said “Though the *Lolium perenne* may not possess all that is desirable in a grass, it is not therefore to be considered as of no value, and indiscriminately rejected. The complaint so generally urged against it, of its producing little more than stalks or bents, will be only found valid when the plant grows in upland pasture and dry situations: in rich, moist meadows its foliage is more abundant, and it seems to be the general opinion of agriculturists that it is highly acceptable and nutritious to cattle. Its foliage is of rapid growth, and its flowering stems are continually shooting forth.” Again, in the reference to the relative merits of grass, he found i

said :—* “The *Lolium perenne*, or perennial ray-grass (for “ there is also an annual of this variety), is an ancient grass “ and one of those the seed of which has been preserved the “ earliest and in the largest quantities. It has, nevertheless, “ suffered greatly in character, these many years past, as “ the most exhausting crop of all the gramineous tribes. “ There may probably be some prejudice in this case. But “ granting it an exhauster, is not that circumstance neces- “ sarily a proof of its solid nutritive powers?—and, if so, “ does it not repay the expense of the necessary superin- “ duction to recruit the soil? It is, perhaps, the most “ substantial of all the grasses, and being of an absorbent “ and astringent quality, the most safe for sheep in a rotting “ season. It is early, and will grow on all soils, and on “ many, a crop of rye-grass and clover may be obtained “ where no other would succeed.” These extracts showed that a great many years ago, there were the same differences of opinion among agriculturists as to whether rye-grass should or should not be used.

He noticed, also, that STILLINGFLEET in his book said :— “ I should be apt to think that the grass (darnel, or rye) “ would not be proper for sheep (as it does not suit deer for “ venison) unless the soil is rich. A worse grass cannot be “ grown as it will certainly die off, in a very few years, “ entirely.” This was a confirmation of Mr. DE LAUNE’s theory that rye-grass falls away; but it was probably true only under certain circumstances. He therefore could only repeat what Mr. WATNEY had said, that from one point of view, no doubt, Dr. FREAM was perfectly right, and that, from another, Mr. DE LAUNE was also right; but the advice given by the latter was, he thought, unfortunate, inasmuch as not enough attention had been paid by Mr.

* This extract is from the “Additions to the Sixth Edition,” published in 1824, after CURTIS’ death.

DE LAUNE to the varying nature of the surroundings, when he advised farmers all to exclude rye-grass from their permanent grass mixtures. It was certain that Mr. DE LAUNE was guided by the very best intentions, but he thought that had he advised farmers to adopt rye-grass or not, according to the character of the soil and other circumstances, a much better service would have been rendered to agriculture than by the sweeping denunciation of a particular grass. It must be remembered, however, that farmers had to thank Mr. DE LAUNE, Mr. CARRUTHERS, and the Royal Agricultural Society, for the improved quality of seeds especially, and for the recommendation that purchasers should insist upon having guaranteed seeds. Those who were in the business saw the extraordinary advances made in that respect, and he was sure that such advances could not have been made so rapidly and so thoroughly if this point of the guaranteeing of seeds had not been so strenuously insisted on.

Mr. CLARE READ (Visitor) said that, as he came from the county of Norfolk, it was hardly necessary to state that his experience in converting arable land into grass had not been very extensive, and had certainly not been very successful. He had read with very great interest Dr. FREAM's Paper, and the discussion upon it, and on the whole, he had come to the conclusion that the author of the Paper was right, and that his friend Mr. DE LAUNE was wrong. He considered it an absurd thing to condemn rye-grass *in toto*. There was no doubt that in times gone by a much larger percentage of rye-grass was introduced into what were called permanent pastures than was necessary. This was, as had been well explained, on account of its cheapness, and this cause for its use was, he believed, likely to continue, and possibly to increase with the diminishing means of the farmers.

His experience was that in laying down land to grass it was best to mow it the first two years and to mow it early. After that it should be well manured and fed. He did not think that farmers in the county of Norfolk would ever lay a large quantity of land down to permanent grass. The soil and the climate were most decidedly against this course, but they had, of late years, somewhat altered their rotation of grasses, and, instead of keeping them down only one year, they had allowed the artificially-sown grass to lie for two and sometimes three years.

When he was told that rye-grass would very soon die out when sown as permanent grass, he must say that his limited experience did not bear out that conclusion. He believed that the plants remained for many years, as they certainly had done in his case. It was just within the bounds of possibility that this might arise from the peculiar method that rye-grass had of seeding, and the wonderful vitality that it possessed. He would explain what he meant. In the year 1886 he had a field of wheat in which he sowed some remarkable clean cow-grass seed obtained from one of the first firms of seedsmen. Wishing in the following year, 1887, to produce some seed, he took the greatest possible care to have it well weeded; and it presented the appearance of one sheet of beautiful purple blossom. He kept it on to the next year, which it would be remembered was very wet, and to his great astonishment a quantity of wheat came up, an enormous quantity of tender rye-grass, and also some timothy. He said to himself, "How can this be? This field has only been depastured with sheep eating oil-cake; there has been no manure put upon it, and consequently this must have happened—that the wheat, which must have been there near the surface, lay during the dry year 1887 and did not sprout."

Then, as to the rye-grass and the timothy. He remembered that, some six or seven years before, this land had been laid down for two or three years with mixed seed, in which rye-grass was predominant, and which also contained a little timothy. It thus appeared that these seeds had lain near the surface during at least one whole summer without growing, and had, somehow or another, been preserved during at least six or seven years, without losing their germinating power. That, he thought, would show that rye-grass seeds had at least the advantage of retaining their vitality for several years.

With regard to what had been said about sowing down pastures—the best way, according to his limited experience in an arid climate like that of Norfolk, was to put the seed down with a crop (and the best crop for this purpose was wheat), to sow the wheat in the autumn and the grass seeds in the spring. There would then be a fine seed-bed with a good consolidated bottom, and the seeds would do very much better than if they were sown later on. He had invariably found, when sowing without a crop, that the grass became more or less smothered with weeds.

MR. A. M. DUNLOP (Fellow) said he did not propose to examine or to analyse the scientific questions raised either by Mr. DE LAUNE, Dr. FREAM, Sir JOHN LAWES, or Mr. CARRUTHERS, but wished to say a few words upon his own experience. He had no doubt that the gentlemen he had named would fight the matter out for the benefit of the country. Speaking, however, not so much as a land-agent but, as a farmer, he might say that, long before he had heard the question raised as to the grasses mentioned by Dr. FREAM and Mr. DE LAUNE, he had had his attention drawn to the question as to what were the best pastures, and whether it would be to the benefit of the tenant to

have more pasture land and less arable or more arable and less pasture.

The prevalence of cattle plague in England had called his attention more prominently to the question of grasses, and therefore he commenced, some twenty years ago, converting arable land into pasture, believing thoroughly in rye-grass as necessary in laying down such pastures. To begin with, he found that the farmers were buying the seed-mixtures from irresponsible seed-merchants, although he had called their attention to the importance of going to the best firms in England and selecting the seeds, and at last, in his capacity of agent, he refused to pay bills for seeds, but said he himself would order the seeds for the farmers. Therefore he had gone to the best seedsmen, selected the seeds which he thought most suitable to the different soils, and handed them over to the farmers, with, he need hardly say, very satisfactory results. In those days he thoroughly believed in the mixture of rye-grass; but he was bound to say that, notwithstanding the views which had been expressed in the course of the discussion, he had altered his former opinion absolutely, and had come to the conclusion that in laying down arable land for pasture he would not have any rye-grass at all. He had now on his small farm some of the finest pasture in the kingdom, and he had not sown a single ounce of rye-grass on it. Thus long before Mr. DE LAUNE made his views public, and long before anything was known about Dr. FREEMAN'S experiments on rye-grass, he, simply trying to improve, had adopted a sort of standard for grass seeds. To this he did not, of course, rigidly adhere, but added to or subtracted from it as he thought the soil required. For the benefit of the younger Members of the Institution he might give his specification, calling attention to the entire absence from it of rye-grass:—

4 lbs.	meadow foxtail.
8 lbs.	cocksfoot.
8 „	meadow fescue.
1½ „	crested dogstail.
1 „	wood meadow grass.
2 „	rough-stalk meadow grass.
1 „	smooth-stalk meadow grass.
1 „	hard fescue.
1 „	sheep fescue.
3 „	timothy.
2 „	cow grass.
2 „	white clover.
1½ „	alsike.
36 lbs.	

No doubt this mixture was more expensive than if a large proportion of rye-grass were added, but he contended, without prejudice to rye-grass, that the pastures that he had laid down, not only on his own farm, but on hundreds, or he might say thousands, of acres all over England, were absolutely better than anything he had ever obtained with a mixture of rye-grass. It might be that he was entirely wrong, or that he had been fortunate in selecting soils to which these seeds were adapted. If a heavy crop were wanted for one or two years, and if rigid economy of outlay were to be studied, he had no objection to rye-grass, especially if mixed with white clover; but he would not use an ounce of it in laying down a *permanent* pasture. The question, which had been so ably debated by the ablest men on both sides, must be decided not only by the gentlemen present, but by practical agriculturists throughout the length and breadth of the country, for it deeply concerned the interests of both the landowner and the farmer. Indeed, he maintained that the interests of the landlord and of the

farmer were identical, and that what the land-agent had to do was to study scientifically and practically the best way to promote the welfare of both classes, and thereby to further the prosperity of the country at large.

Mr. H. S. FENNING (Fellow) said that, after the very great differences of opinion which had been expressed, he felt some diffidence in putting forward his own views. He could not, however, help thinking, from his experience in laying down permanent grass, that many, if not most soils, have rye-grass in them, for, where he had laid down permanent grass seeds without any rye-grass whatever, he found, on going back to those pastures, that there was, in many cases, rye-grass present. This fact, he thought, must not be lost sight of in any discussion on the merits or demerits of this grass. Dr. FREAM and Sir JOHN LAWES had distinctly shown, by two experiments which were exceedingly different in character—one being conducted with sods brought from a distance, and the other from good old pastures *in situ*—that there is present a very large amount of rye-grass in old pastures, which rye-grass he (Mr. FENNING) imagined to be indigenous to the soil.

No doubt, as had been said, horses did much better on rye-grass than sheep, but he thought it desirable to have a certain amount of it in all mixtures. In laying down pasture, seeds were often given a very bad chance; the very worst fields—those farthest from the homestead, which have hardly ever seen the dung-cart, and poor, hungry hill-sides—were frequently selected, and it was no wonder that, in nine cases out of ten, after the seeds were paid for at a cost of, perhaps, 30s. an acre, the result was completely unsatisfactory. On the question of sowing with or without a crop, more failures, he thought, had resulted from the latter than from the former course. Sowing down in a

wheat crop, as advised by Mr. CLARE READ, he (Mr. FENNING) cordially agreed with. He had particularly in his mind one large field—about 40 acres—that was sown down in the spring, half on autumn-sown wheat and half on barley. The grass seed sown on the wheat came up beautifully owing to the ground being solid and firm: that on the barley almost all went off, there being too deep a tilth, and the seeds, getting buried too deep, almost perished during the dry time that followed.

Dr. ALFRED CARPENTER (Visitor) said, having looked through Dr. FREEMAN'S very admirable Paper with the eye of one practically experienced in rye-grass for the last 30 years, he had been surprised at the differences of opinion between the author and Mr. FAUNCE DE LAUNE, which must arise, he thought, from the fact that each side looked at the question from a different point of view, and under different conditions. The same crop which was good and useful at one stage of its growth, or under one set of conditions, might under other circumstances be worthless. But both these gentlemen appeared to have omitted to take into consideration some very important points with regard to the cultivation of rye-grass. It was quite certain that there was no plant which so rapidly exhausted the soil of one or two minerals and of moisture; and rye-grass, planted in a dry soil like that of Mr. DE LAUNE, where the rainfall was smaller than in almost any other part of England except, perhaps, Cambridge, would not, in a moderately dry season, be at all satisfactory. He could understand why upon that soil it utterly failed, for, if properly cultivated, it took the potash and also the moisture out of the soil and dried it up most rapidly, for the evaporation from a properly cultivated field of rye-grass was enormous. There was another important point to be considered with regard to rye-grass. It must

be cut often. If it were mown it must be mown five or six times a year to preserve it, otherwise it was certain to gradually disappear, especially if allowed to go into flower before being cut.

With regard to the question of roots. The writers in the papers on both sides did not seem to have been aware of the principles upon which rye-grass rooted. Anyone looking at a field of ordinary rye-grass would find upon the surface of the soil—not going into it as roots generally did, but on the surface—a kind of matting of roots which very rapidly absorbed moisture, whether rain or sewage, or whatever it might be. But in addition to these there were roots which went right down into the soil, and which he had traced to a depth of two feet. Those roots helped very materially to get certain portions of mineral matters out of the soil which were not capable of being obtained by the roots upon the surface. This, however, did not tell against the experiments of Dr. FREAM, because his plants were not materially damaged by the division of those roots. There was nine inches of soil, but he should think it likely that, if the weight of the produce had been taken, and had been compared with that of the fields from which those sods were cut, a material difference would be found in the quantity of mineral matter contained in the produce as compared with similar results from sods *in situ*.

From what he had said with regard to its greed for moisture, it seemed evident that rye-grass was not a crop on which sheep should be placed. It certainly was not a crop which should be grown upon high grounds or dry soils, but might very well be sown in low meadows that were pretty abundantly supplied with water. This, he suspected, was the secret of that curious alliance of opinion with regard to the Leicestershire ground, and the experiments of Dr. FREAM—that the ground from which the experimental turfs were cut

were like to those rich, moist meadows in Leicestershire, in which the young grass was taken off rapidly by the beasts that were kept upon it, and there was, consequently, that rapid growth on which a satisfactory result so much depends. It also appeared to him to be very important to consider the mineral character of the soil upon which rye-grass was to be sown, and also the amount of rainfall in the district, and of any available subsoil water that might exist; but, in the absence of such water supply, he would not advise anybody to sow rye-grass for permanent pasture. But with these advantages, and especially in meadows with a southern or a western aspect, sheltered by hills from the north and from the east, rye-grass might certainly be used with satisfactory results in permanent pastures if constantly fed down.

The difference of opinion as to the value of rye-grass was supposed to be something new, but a reference to SOWERBY, or to most botanists, would show that a Dr. PLOTT, writing in 1667, described precisely all that was known now about rye-grass. He named the same two varieties as were now known (both possibly derived from the same stock)—the perennial and the Italian. He (Dr. CARPENTER) thought that the perennial rye-grass, as known in this country, was not so advantageous for the purpose of producing a heavy crop as was the true Italian rye-grass, which produced a larger amount of feed than the *Lolium perenne*. It was said by Dr. PLOTT that the perennial variety, which was of shorter growth than the other, would, on some soils, last four or five years. He (Dr. CARPENTER) thought this about correct, and that those who were so pleased with the results in the second, third, and fourth years would, in the fifth and sixth, notice a considerable falling off. This must result if it was not well manured. Fields laid down with rye-grass must be well and frequently manured in one way or another, if the crops were to con-

tinue. Of course, if sheep were folded on it for a little while, in a dry spring it would be manured to a certain extent, and perhaps the sheep would not be kept long enough there to be damaged by it. Still, if manure were not frequently applied, there would be no crop—so exhausting was rye-grass of the material necessarily required for the growth of vegetable matter. Then Dr. PLOTT said the annual, or rather biennial, variety grew the second year, and, if prevented from flowering, might be kept on for several years, but, if it were once allowed to flower, and especially to form seed, the root would die in the following year.

On another point which was mentioned in the Paper writers were in antagonism. One said stock would not eat rye-grass, and another said they would do so greedily. He had tried experiments upon that point over and over again. He had placed rye-grass side by side with other fodder for horses and cattle, and found that both went to the heaps of rye-grass in preference even to corn or any other feed that was placed before them. There was no doubt whatever in his mind that fresh-cut rye-grass was always acceptable to cattle. It must, however, be young. If it were allowed to go to seed, and made into hay in that state, it would be hardly worth making. Very frequently the hay of Italian rye-grass was hardly worth anything as fodder. Its value was very materially less when converted into hay, because it dried up so much more than was the case with ordinary hay.

He would not make any suggestions with regard to permanent pasture, for his attention to rye-grass had been principally in connection with sewage-farming. He had assisted for some years in the management of a sewage-farm, of which some 600 acres were under rye-grass, and some of that land was now doing its work with regard to the purification of sewage, as effectually as it did thirty years ago.

If properly cultivated, it would yield forty tons a year per acre, which was what he considered ought to be got from each acre of rye-grass under cultivation. It was found impossible, however, to do this year after year. At the end of the third year the crop began to fail, and in the fourth year, if not broken up, there would be scarcely any crop at all. That was his experience—that rye-grass should be laid down for water-meadows and for sewage-farming rather than for permanent meadows. It was very beneficial in moist soils containing an abundance of phosphates. Very excellent crops might then be got from it in the shape of green food, but it must not be expected to produce equally satisfactory results as a perennial plant. If there were abundance of sewage or of liquid manure applied to the soil, or if the soil were moist and it was desired to use something to dry it, rye-grass would do this very thoroughly, and the more it was cut the more would be got from it.

It was a mistake altogether for a farmer to hesitate to cut his rye-grass when it was a foot high, for the oftener he cut it the more produce he would get from the field, provided it had the requisite ammoniacal nutriment, and especially the potash which was absolutely necessary to enable the plant to grow.

Mr. J. SHAW (Fellow) remarked that, without going at length into the question of rye-grass, he would state a few facts within his own experience with regard to the laying down of permanent pastures. He had been much interested in the very able Paper which had been read by Dr. FREAM, who, he was sure, would allow him to call attention to a clerical error, which appeared on page 280, in which the area of the land experimented upon was described as being about one-thirty-fifth part of an acre, whereas it was really much less.

He was much struck with the absence from the Paper, and also from the discussion, of any definite allusion to the question of soils. He would have been glad of some information from Dr. FREAM as to the character of the soils from which he took his specimens. As a rule, as Mr. WATNEY had said, those interested in the laying down of land for permanent pasture had, unfortunately, to deal with old tilled arable land, very much worn out, on which it was very difficult to get good grasses to grow. There was, in his experience, no difficulty in seeding down good land to permanent pasture, but there was great difficulty in the case of poor land, like most of that with which land-agents had to deal for this purpose. He certainly thought, with Mr. WATNEY, that Dr. FREAM's aim to arrive at "the establishment of grass-land comparable with the fine old feeding-pastures in the country," was scarcely likely to be realised, but he could say, from his own experience, that in many cases the attempts to establish permanent pastures had been fairly successful.

In laying down a permanent pasture the first thing to be done was the preparation of the ground. A very great deal depended upon securing the right tilth, and getting the land into the right condition for taking the seed. Then it did not much matter, on certain soils, at what time of the year the seeding down was done, or whether with a crop or without a crop, but it must be done when the land was in the right condition to receive the seed. He also agreed with Mr. CLARE READ that in many cases there has been great success attained by seeding down on a wheat crop. He had known some excellent pastures made in that way.

With regard to the selection of seed, he had for thirty years paid great attention to seeding down, and had never thought it desirable to sow a large quantity of rye-grass for permanent pastures. The plan which he adopted was to

deal with the best firms of seed-merchants, giving them a description of the soil which he was going to seed down, and asking them to send a list of what they would recommend as the proper seeds for sowing on such land. In some cases he had selected the seeds himself, but had never suggested or used a larger quantity of rye-grass than was mentioned by Mr. WATNEY.

A great deal also depended upon the treatment of the crop after it had been seeded down. As a rule, in dealing with tenants he expected that they would do what was necessary in the way of top dressing, while reaping the benefit of the new pasture, as they certainly did in the first two or three years; but in the fifth or sixth year, when the seeds were dying out, he had considered it a landlord's question, and had done what he possibly could in providing a good top dressing. The best top dressings for strong soils were, as a rule, good farmyard manure, and in some cases bones, but, as was well known, bones did not act upon all descriptions of soils. With regard to the character of the hay made of rye-grass, a previous speaker had referred (on page 307) to the demand for rye-grass hay for horse feed. In his opinion that was a most important question, and was illustrated by the case of some fields of his own. He had two fields of excellent land sloping to the south upon the red marls, and in one field there was, he believed, very little rye-grass. There were, however, all the better grasses,—Dutch clover and the fescues,—and it produced what was locally called “soft” hay. In the adjoining field the pasture consisted, to a very great extent, of rye-grass, and that produced what was called “hard” hay. His horses would not touch the soft hay if they could get the hard, and therefore he quite agreed with the opinion expressed as to its value for horse feed. But, when he came to the character of the pasture, then he found an advantage

in the first-named field, which produced the soft hay. Upon the same quality of land, lying side by side, in one case he had an excellent pasture, upon which he could and did feed good cattle occasionally, while in the other he had a pasture upon which he could not attempt anything of the sort. In fact, the value of the one field without the rye-grass was considerably more than that of the other.

He had also found, from experience, that rye-grass impoverished the soil. Only last week he was walking over a farm for the first time, and was very much struck with what he saw there. Some of the land, which was strong clay, with a thin, hungry subsoil, had been seeded down for permanent pasture some five or six years ago. The rye-grass had predominated to a very large extent, and it seemed to have pushed out the other grasses, and the grass which was growing was, as far as he could judge, to a very great extent, couch-grass. Of course that might arise from the fact of the rye-grass not being of good quality when it was sown. That he knew nothing about, but his experience taught him that, whatever might be sown, ultimately the natural grasses, indigenous to the soil, would prevail.

MR. JOSEPH DARBY (Visitor) said he believed that no one in the room had seen more of Mr. DE LAUNE's pastures than he had. He went to see them in the first place as a commissioner for the *Field*, and had watched them with great interest during the third, fourth, fifth, and sixth years. He believed that Mr. CAIRD had formed an erroneous impression from something that Mr. FAUNCE DE LAUNE had told him about the cherry trees. If a farmer were laying down arable land for pasture, with the idea of also planting cherry trees, he would not manure his pasture for the cherry trees, but would put the manure for the cherry

trees under them or about them, especially when they were, as he knew them to be in this case, from 33 to 41 feet apart.

He must take exception to the principle upon which Dr. FREAM had made experiments. Dr. FREAM had remarked that it was necessary to go to the pastures themselves, to see what they were, and to take the best of them for examples, and had said :—"One most singular factor has been left out of consideration, and indeed has, apparently, never formed the subject of systematic inquiry, and that is, the exact nature of the herbage which covers our best old grass lands." He (Mr. DARBY) thought that this had not been done for the simple reasons that the management of both poor and rich grass lands had in the past been very bad, and that instead of being content to think that whatever was, was right, inquirers should rather have gone on the contrary supposition that whatever was, was wrong. He would quote no less an authority than the late Mr. W. C. THOMPSON, of Kerby Hall, York, who wrote two very excellent Papers in the Royal Agricultural Society's "Journal." In the first, in 1858, he said distinctly that the great defect of British agriculture was the neglect of so large a portion of the grass lands; and everybody who had written on the subject had admitted the same up to a very recent period. But he would more particularly call attention to another Paper written by Mr. THOMPSON in 1872, wherein he said that, after personal observation of the grass lands of Ireland and of the most famous grazing districts of England, he had come to the conclusion that, although excellent results were obtained in parts of the best agricultural districts in Leicestershire, Northumberland, Gloucester, and Somerset, and some other counties, these must be considered quite exceptional, and that the treatment of the bulk of the grass lands of the

country was very unsatisfactory. He (Mr. DARBY) once lived on the verge of one of the districts mentioned by Mr. THOMPSON, and had occupied land which was described as "best land," which would produce 20 imperial stones of meat per acre, without any artificial assistance, but unfortunately the quantity of such land was extremely small, and for the most part confined to the alluvial flats which had accumulated near existing and former outlets of tidal rivers. The far-famed pastures along the banks of the Parrett, in Somersetshire, were of this character, and constituted, probably, the most extensive flat of first-class land in the United Kingdom. Here might be seen 1,000 acres let for grazing, which brought in from £5,000 to £6,000 per annum, but even on such land there was not a single acre without a crop of weeds. So it seemed that even the best land was improveable.

He did not think that many of Dr. FREAM's plots could be classified as "the best land." At least a dozen of them had over 30 per cent. of "mixed herbage" as it was termed, but which he would put down as weeds. All the Irish ones had a large quantity of miscellaneous weeds in them. Surely, if Dr. FREAM held these to be model pastures he would not advise the sowing of the exact seeds which would produce the herbage that is to be found in them.

He could not find one among these specimens so perfect that he would advise seedsmen to alter their mixtures and sow only what was to be found there. In many there was neither foxtail, meadow fescue, cocksfoot, nor timothy—tall fescue being in none. And if there was rye-grass in twenty-four, there was also in twenty of them the Yorkshire fog.

He thought that the differences of opinion on the subject of rye-grass might be reconciled by considering that, while

it would grow beautifully on low flats, it would not do on high, dry soils.

Stock liked it very well when the grass was fresh and succulent. In the case of the low lands it was the richness of the soil which gave the fattening character to the grass, but on almost all other soils the grass possessed little succulence after Midsummer, and went to seed.

Dr. W. FREAM, in replying, said he feared it would be impossible, at that late hour of the evening, to go through the whole of the points elicited in the course of the discussion. He would therefore confine himself to some of the principal criticisms: but he wished first to notice in his Paper an error that had escaped correction. The breadth of the composite pasture referred to on page 280 should be one foot, and the area one twenty-fifth of that stated. He desired to thank his friend Mr. CARRUTHERS for attending the former Meeting; it was certainly very chivalrous of him to come forward in defence of Mr. DE LAUNE's Paper, published half-a-dozen years ago, and for the opinions expressed, for which Mr. CARRUTHERS was himself in no way responsible. On the other hand, he regretted Mr. DE LAUNE's absence. He had written to that gentleman twice, and had received very courteous replies, but it would have been more satisfactory if Mr. DE LAUNE had favoured them with his presence.

He noticed that Mr. CARRUTHERS took exception to his placing in opposition to each other that gentleman's recommendation of rye-grass as an ingredient of mixtures for one or two years' ley and Mr. DE LAUNE's statements that rye-grass was of low feeding value, that it was a worthless grass, and must generally be regarded as a mere weed. Of course, he himself quite agreed with Mr. CARRUTHERS

that rye-grass was a good plant in rotation, but the fact that it was a good plant in rotation manifestly went to demonstrate that it was not a grass of low nutritive value; in fact, there had been adduced during the discussion quite sufficient testimony to prove that Mr. DE LAUNE was not justified in characterising rye-grass as a grass of low feeding value. He (Dr. FREAM) still ventured to think, notwithstanding Mr. CARRUTHERS' disclaimer, that he was not quite consistent, because he stated (page 310) "that stock would not select rye-grass if they had other grass alongside of it to feed upon." If that were so, why should Mr. CARRUTHERS still recommend it as a good plant to grow in rotation?

There was another point of disagreement between Mr. CARRUTHERS and Mr. DE LAUNE. Mr. CARRUTHERS spoke of a field which had been laid down last autumn, and for which he recommended a mixture containing no dogstail. Mr. DE LAUNE, on the other hand, recommended 2 lbs. of dogstail per acre, and in his Paper of 1882 it would be found that Mr. DE LAUNE persistently recommended dogstail throughout, even to the extent of one-eighth of the whole mixture. Yet Mr. CARRUTHERS (page 311) stated that dogstail was always rejected by stock.

A very ingenious and very plausible argument had been brought forward by Colonel RAIKES. It was desirable to refer to it because, if the fallacy underlying it were not exposed, it might do a great deal of harm. Colonel RAIKES said, at page 312:—"If, when planting a clover field in rotation, one half of it were planted with rye-grass and the other half without, and the whole field were treated in the same way, then, whether it was mown or whether it was fed, there would, unless he was very much mistaken, be a better crop of corn next year where the clover was planted alone than where the rye-grass was planted with

“it.” In other words, he said:—“Plant one half of a field with rye-grass, and the other half with clover, and next year take a wheat crop; the latter will be better on the old clover land than on the old grass land.” Of course it would. The fallacy here was that Colonel RAIKES brought this forward as an argument against rye-grass. The facts which Colonel RAIKES had stated were perfectly true, but the argument was fallacious for this reason—that, if for rye-grass Colonel RAIKES had substituted any other grass, the same assertion might have been made. Everyone knew that leguminous plants, like clover, would leave the soil richer than they found it. It was, therefore, mere special pleading to urge this charge against rye-grass, and he was very anxious that it should not go forth in the “Transactions” uncontradicted. If Colonel RAIKES could explain the reason of this beneficial action of leguminous plants, he would solve a problem which had been exercising the minds of chemists and agriculturists for many years past—no other, indeed, than the celebrated nitrogen question.

Again, Colonel RAIKES said, at page 313, “that, if the rye-grass got into bents after Midsummer, it was very difficult to get it fed down, and, in the case of the young pastures which he had planted before giving up sowing with rye-grass, he had had frequent occasion to brush them over with the scythe, in order to get rid of the bents before the winter.” That was true of almost all grasses if they got into bents. Some years ago he had searched many parts of the country for ergot, and had found this fungus, in the fall of the year, on as many as twenty species of grass, and of course it could not then have been detected on those grasses, unless the old bents had been neglected by the stock. The reason for the prevalent notion that rye-grass is specially

liable to be ergoted is that the quantity of rye-grass throughout the country is so greatly in excess of that of other grasses.

With regard to the remarks of his friend Dr. VOELCKER concerning the cutting of the deeper roots in his experimental plots, he was, of course, perfectly well aware that plants search for nourishment at great depths in certain soils. That had been proved over and over again in the Rothamsted experiments, and it would be foolish in him to deny it—in fact, he believed it, and had done what he could to explain that he did believe it. His point, however, was that a section of the roots, at a depth of nine inches, did not kill pasture plants. There were none of the very deep-rooted leguminous plants in his sods. Dr. VOELCKER had instanced lucerne, which was a deep-rooted plant. But they did not find (and he was aware Dr. VOELCKER did not say that they found) lucerne in pastures.

It would, he was aware, have been preferable if he could have experimented on larger areas of turf, but, seeing he had collected as much as three tons of soil with his turfs, and that these were brought in 25 different boxes along nearly all the lines of railway in the United Kingdom, he felt he had spared no reasonable pains to arrive at sound and conclusive results; and, short of getting the whole pasture, and of calling to his aid an army of botanists to analyse entire haystacks, he did not know how they could get nearer to the facts than he had done.

The first speaker that evening (Mr. WATNEY), in his very interesting observations, took exception to the remark in the Paper, "In laying land down to permanent pasture, " the object which every cultivator has had in view, and

“ the goal presumably at which he hoped he should arrive, “ has been the establishment of grass land comparable with “ the fine old feeding pastures which constitute so valuable “ a feature of the surface of Great Britain and Ireland.” He presumed that when a man was laying down land to grass he hoped to get something good, and the word “ presumably,” which he had used advisedly, sufficiently met the objection. Mr. WATNEY also insisted upon the fact that rye-grass had fibrous roots. So it had, but so had the whole gramineous family. He knew of no grass—neither reed nor sugar-cane, nor any plant whatever belonging to the gramineous order—which was not characterised by the possession of such roots.

With regard to Mr. DUNLOP’s observations, that gentleman had come to the conclusion that pastures were best laid down without rye-grass, but he had not been able to gather from Mr. DUNLOP’s remarks the reasons which led him to make that assertion, or the points of practice or of experience which had influenced him in arriving at that conclusion. He (Dr. FREAM) was strongly of opinion that, even on some of those pastures on which Mr. DUNLOP did not employ rye-grass seed when they were laid down, rye-grass would now be found, and he believed that, in a great many cases where it was thought that there was no rye-grass at all on the land, careful examination would reveal it. At the present moment he had on its way to him a turf from one of those very pastures laid down under Mr. DUNLOP’s instructions,—he believed, some twenty years ago; whether with or without rye-grass he could not say, but he proposed, in due course, to subject this turf to the most careful examination, and “ a “ true verdict give, according to the evidence.”

Mr. DUNLOP explained that the pasture which Dr. FREAM

spoke of was not the one to which he had referred. He did not think there was any rye-grass in it.

Dr. FREAM, resuming, said that he would point out again, as he did on the last occasion, that the fact that Mr. DUNLOP had succeeded without rye-grass could not be used as an argument against rye-grass.

Then Dr. CARPENTER had introduced some important points of botanical rather than of agricultural interest, but had not always made it quite clear when he was speaking of perennial rye-grass and when of Italian. He had spoken of the evaporation from rye-grass which, he said, was very great—in fact, greater, as he (Dr. FREAM) had gathered from his observations, than from any other crop. He doubted very much whether the evaporation (or, if Dr. CARPENTER would allow him to use the word, the transpiration) from rye-grass was anything like so much as it was from such broad-leaved grasses as the cocksfoot and the meadow and tall fescues. When Dr. CARPENTER said that he had found rye-grass roots two feet long, he (Dr. FREAM) felt it to be a point strongly in his favour. He had been very severely taken to task about the roots of these grasses, and was rather pleased to hear such a careful observer as Dr. CARPENTER say that they were two feet long, because, of course, in that case, obviously these rye-grass roots must have suffered severely, and therefore, if any grass ought to have disappeared, supposing his sections were too shallow, it should have been the rye-grass. Mr. CARRUTHERS had stated that the “shallow” turfs, as he called them, were of such slight depth that the best grasses were killed out. But, as he (Dr. FREAM) had asked in his Paper, what were these grasses? He did not know. Nobody knew.

Not a single speaker to the subject had said anything about it, and he concluded, therefore, that there were no grasses killed by the section being taken at a depth of nine inches.

He was somewhat interested in Mr. SHAW's statement that horses eat the rye-grass, but would not touch what Mr. SHAW had called "the better grass." Now, his test of a good grass was that it was one that animals would feed upon, and the fact that they took rye-grass in preference to the other grasses showed, in his opinion, that the rye-grass was a good grass.

Coming to the remarks of his friend Mr. DARBY, he must point out that his turfs were specially selected from pastures celebrated for their high feeding quality—in fact, they represented some of the very best pastures in the country whether for the production of beef or for dairy purposes. He had not seen most of them himself, nor been near them. He had simply written to one gentleman after another, asking for a sample from his best pasture. He did not say, "Select a clean bit without any weeds in it;" but took them as they came, and grew them on their own nine inches of soil, with the results which he had placed on record. The pastures which he had sampled were the best to be found, and he would invite Mr. DARBY to point out, if he could, any that were better, or to say if, by any mixture, he could produce a better pasture—a pasture that would fatten more than a bullock an acre. Mr. DARBY had brought forward Mr. THOMPSON's Papers, written some years ago, but Mr. THOMPSON made certain exceptions. He excepted the counties of Leicestershire, Gloucestershire, and Somersetshire, which were the very counties from which one-third of his English turfs had come. He wanted to learn what grew in their best pastures, and so to discover what herbage led to the most effective production of beef and milk.

He was sorry to hear Mr. DARBY bring forward, as an argument against his investigations, the fact that, although he (Dr. FREAM) had found rye-grass on twenty-four turfs, he had also found Yorkshire fog on twenty, and that therefore Yorkshire fog ought to be almost as good as rye-grass. He had lately pointed out the fallacy of this in a letter in the *Times*, in reply to a letter from Mr. DE LAUNE, in which that gentleman fell into the very same error that Mr. DARBY, two or three weeks later, now revived. Moreover, in his original Paper, he had given a table showing the quantity, by weight, of the various grasses. Anyone who had well studied that table would find that, on the whole, rye-grass was about thirty-four times as abundant as Yorkshire fog. Of course he did not believe in Yorkshire fog, and would not recommend its being sown; indeed, the very small proportions of Yorkshire fog that he had found, were in many cases unweighable.

Then Mr. DARBY had fallen foul of what he called "the weeds" in his (Dr. FREAM's) pastures; but he would like to point out one or two very important details in this connection: first of all, that some of these weeds—and one that he had found especially prevalent in two or three cases—were specially recommended by Mr. DE LAUNE. He found, for instance, yarrow. Mr. DE LAUNE recommended that when laying down land to grass on chalk soils, more than one-fourth of the germinating seeds should be yarrow. Considering that yarrow was indigenous to the chalk soils and grew there most freely, he felt that any attempt to follow Mr. DE LAUNE's advice in that respect, would result in the fields being even more covered with yarrow than at present. But there was another view. His turfs were grown under such conditions that miscellaneous weeds had an opportunity of growing which they never had in the pasture. In the

“Journal” of the Royal Agricultural Society he had stated his reasons for believing that the miscellaneous herbs would be more numerous on the experimental turfs than in a natural pasture. He had proved this from the evidence of Mr. GILBERT MURRAY (a very careful observer), and also in the case of a turf from grass land in county Clare, where there is some of the best pasture in Ireland. In that turf he had found 50 per cent. of sorrel, although in the summer it would not have been possible to find any in the pasture. Why were the weeds to be found in the turfs and not in the pastures? Was it not because animals, in grazing, nipped away the terminal buds of the weeds, which were not grasses, and their growth for the whole season was thereby checked? Many of the grasses, however, thrived under this treatment, and simply sent out little shoots all round, actually growing more vigorously for being fed. But such weeds as sorrel and hawkbit were nipped down early in the season, and their roots remained to shoot up the next season. These, it was practically certain, formed a very small proportion indeed of the effective herbage of a good pasture, under the ordinary conditions of grazing.

There were other points of interest concerning the “miscellaneous herbage.” In the first place, if the Irish pastures were separated from the English, it would be found, as might have been expected, that the Irish pastures were a good deal more weedy than the English ones. In fact he found, in the Irish pastures, an average of 53 per cent. of miscellaneous herbage. That was the case with the eight Irish pastures which he had under examination. On the other hand, the English pastures—taking the 17 of them together—only gave 22 per cent. of miscellaneous herbage, which was fairly low. He found, moreover, that in five of these cases the miscellaneous herbage was unduly

prominent on account of the presence of one or two stout, robust plants. In one case the turf was nearly smothered with yarrow; in another, sorrel made a great show; in another case, plaintain, and in yet another, hawkbit; and these would naturally weigh a great deal as compared with the delicate leaves of the grasses. Taking out these five exceptional samples from the 17, and dealing with the remaining twelve, he found that five of them contained, practically, no weeds at all; two of them contained only 2 per cent. of weeds; two of them contained 5 and 6 per cent. respectively; and three of them 14, 15, and 16 per cent. by weight. Thus a dozen representative good old English pastures contained an average of only 5 per cent. of miscellaneous herbage. He thought this showed that the pastures were not bad. But he must still fall back upon the fact that the samples he took were from the finest old pastures. It was scarcely fair for Mr. DARBY to say, "I examine 'this or that pasture, and I do not find any timothy or 'any foxtail, or any fescue, or any cocksfoot; therefore 'it is a bad pasture.'" That was altogether a wrong way of dealing with the problem—it was, in fact, begging the question. What was required to know was what the pasture would do. Would it fatten a bullock per acre? Would it produce abundance of excellent milk? One of his samples was from Mr. NUTTALL'S Stilton pasture in Leicestershire, which produced the very best results, and which was never dressed at all. It abounded in rye-grass, and this rye-grass must be judged by the work it would do in fattening the animals or in promoting the yield of the milch cows that graze upon it. Judging by this standard, he had found, as stated in the Paper, overwhelming evidence in favour of rye-grass on the grass lands of Britain.

In conclusion, there was one other point to which he

would wish to refer. He was very much surprised that the few speakers who represented what he might call the opposition had not said a single word about that very elaborate and interesting series of observations carried out by Sir JOHN LAWES and Dr. GILBERT on the famous pasture at Market Harborough. Why had this not been discussed? It would have been convenient to have had it noticed, because the facts there established were so completely significant, and had been accumulated not in one year only, but in four years, extending over a decade, and yet, whether in 1879, 1880, 1882, or 1888, in that fine old feeding pasture any quantity of rye-grass was found.

In face of such facts as had been adduced he felt justified in contending that Mr. DE LAUNE's wholesale denunciation of rye-grass, without any qualification whatever, was unjustifiable. Mr. DE LAUNE had, in fact, reasoned from the special to the general, simply giving the results of his own experience within the limits of his own farm. He had said, in effect, "*I find rye-grass is bad; therefore it must be bad everywhere.*" But he would venture to submit to the Members that he (Dr. FREAM) had proved—not merely suggested—that most of Mr. DE LAUNE's assertions respecting this grass were absolutely untenable; and in this position he would leave the case.

THE CHAIRMAN remarked that Dr. FREAM's most excellent Paper, and the subsequent discussion, had illustrated very powerfully the truth of the saying that "every shield has two sides." He must say (and he did not think his official position as PRESIDENT denied him the right to say it) that he thought the laurels in this instance certainly rested upon the brow of his friend Dr. FREAM. He said this with every respect for the opinion of Mr.

CARRUTHERS and Mr. FAUNCE DE LAUNE, but, looking at it as a pure, abstract, philosophic inquiry, he thought that Dr. FREAM had proved his case from pure fact and experiment, and that the views of those who had taken up the opposite position had been really nothing more than unsupported statements. That there had been very good pastures grown without rye-grass was quite true, but, as his friend Mr. CLARE READ had pointed out, rye-grass seemed to be capable of retaining its vitality for many years, and of reproducing itself after a lapse of time.

Speaking as a farmer of some little experience and as connected with land, he was much surprised that in the course of the discussion allusion had only been made to two varieties of rye-grass, viz., the Italian rye-grass and the *Lolium perenne*—the two most common rye-grasses. He knew from experience that one might obtain two or three varieties of rye-grass, according to the circumstances under which they were to be sown. There were the common rye-grass (the *Lolium perenne*) and the Italian rye-grass, which was totally different. Then, for two or three years' crops, there was what was called "Devon rye-grass," and besides this the "green" rye-grass. These varieties did not seem to have been mentioned by any speaker. He did not pretend to know their natures or their qualities, or what results they would give under varying circumstances; but he knew them, certainly, as separate and distinct things, to be applied according to the requirements and the circumstances under which they were to be placed. But at this late hour of the evening he would not discuss these matters any further.

No one who travelled through the midland counties could pass through those wonderful rolling pastures without inquiring at what time in English history they became

pastures. It was quite clear that those rolling midlands simply represented arable land gone out of cultivation. They had been there growing naturally for uncounted years, and had ultimately resulted in the beautiful pastures which were now to be seen. His friend Dr. FREAM had had specimens from those pastures, and in them had found ryegrass. Well, where did it come from? Where did the other grasses come from? He could not tell. But nature, in her wonderful bounty, seemed to boast an inexhaustible store of reproductive grasses fitted to the soils upon which they were found, and one of the questions which he commended to the young Members present for elucidation was, where these grasses came from, and how they came there.

His friend Mr. DARBY had taken exception to the way in which the turfs experimented upon by Dr. FREAM had been taken. He considered himself extremely happy in having been associated with Dr. FREAM in obtaining some of the specimens of turf. He would give one or two instances of the pastures from which they were taken. One was from a field belonging to a relation of his own, at Ashburton, in Devonshire, which was one of the richest pastures that he had even seen, as was proved by the fact that a rent of nearly £8 an acre was paid for it. Another sample came from a pasture in Somersetshire, which also belonged to a relative of his—Mr. HANCOCK. It was from the alluvial soil, just at the junction of the new and the old red sandstone, in a valley the herbage of which was never other than of the most verdant and brilliant green that one could conceive. Mr. HANCOCK's cattle were giving abundance of milk, and were also as fat as need be. This, therefore, could not be very bad land.

Another sample that Mr. DARBY had cited was taken from the alluvial deposits of the Parrett.

Those were the facts, and he could only express the satisfaction which he felt, and in which he was sure the Members would share, that the experiments had been tried and brought to such a careful and satisfactory termination by Dr. FREAM, and he hoped this would be but one of a great number of instances in which experiment would, in the future, take the place of theory.

The Meeting then adjourned.

THE RATING OF GROUND-RENTS.

By GEORGE BEKEN (FELLOW).

*Read at the Ordinary General Meeting of THE SURVEYORS'
INSTITUTION, April 1st, 1889.*

MR. ELIAS PITTS SQUAREY (PRESIDENT) IN THE CHAIR.

AN agitation has for some considerable time been carried on in favour of the "Taxation of Ground-Rents." It has been difficult to ascertain authoritatively what is meant by the expression, and its very vagueness has facilitated the growth of the movement, by leaving free scope to the flight of individual fancy.

The subject under one form, viz., "the question of imposing a direct assessment on the owners of ground-rents," has been for nearly three years before a Select Committee of the House of Commons.

In another form it was brought forward in the "House," on the 18th July last, as an amendment to the Local Government Bill, when it was proposed by Mr. CHANNING to enable lessees and occupiers to recover from their landlords, by deductions from rent, a proportion of the rates and taxes paid by them, notwithstanding a contract on their part to exonerate landlords from the whole of such burdens.

The reference to the aforesaid Select Committee was ordered, after a debate on a motion by Mr. WILLIAM SAUNDERS, then M.P. for East Hull; and we find Mr. SAUNDERS, as a witness before the Committee, expressing the opinion that all property in land is "robbery," and stating that, if he could have his way, he would tax land

at 20s. in the £; also that the "nationalisation of land," without compensation, is the only true remedy for the evils now incident to its ownership by individuals.

With these facts before us, it is not surprising that all sorts of wild theories and random promises have been poured forth throughout the country, and that there is a widespread, indefinable feeling abroad that some alteration may be beneficial, but at any rate that "something new" might be tried.

It will be my endeavour, this evening, to lay before you the alleged reasons for legislative action, to examine whether there is any need for it, and to show the probable results of such action if taken.

I have hesitated whether to style this Paper "The Taxation of Ground-Rents" or "The Rating of Ground-Rents." The word "Taxation" (if we omit the land-tax, which does not affect the question before us) is applied specifically to the income-tax and house-duty, which are paid to the Imperial Exchequer, whilst "Rating" is applied to contributions to the local authorities.

The word "Taxation" is, however, often used generally to embrace both these classes of imposts, and in that sense I use it, for convenience, in this Paper, when the meaning is not limited by the context.

The conductors of this agitation have created an impression among some people that in taxing ground-rents they would tap a new source of revenue, to the great relief of the community at large. To this the reply is that, unless ground-rents be taxed twice over, it would not add one penny to the imperial revenue, or contribute one *iota* to the local rates.

A house *without* a ground-rent, and a house, exactly similar, *with* a ground-rent, often stand side by side, so that a comparison is easily made. Avoiding, for the present, ex-

ceptions not affecting the principle, it may be said that a house without a ground-rent is owned entirely by one person, viz., the freeholder, out-and-out; whilst a house with a ground-rent is owned by two persons having different interests, viz., first, the freeholder, who has limited his immediate interest by granting a lease at a rent below the value of the property, called a ground-rent, and in fact sometimes at no rent at all, called a peppercorn, and who is therefore termed the ground-landlord, or lessor; and, secondly, the person owning this lease, hence called the leaseholder or lessee, and who is entitled to the use of the property for a fixed period on certain conditions, including the payment of the ground-rent if any there be.

It matters nothing to the Imperial or local revenue authorities whether a house belongs entirely to one person, as when freehold, or partly to one and partly to another, as when leasehold. The one house does not cost more than the other for roads, lighting, police, &c., and should not contribute more to the taxes.

Further, a house that is freehold to-day may be converted into a leasehold to-morrow, and *vice versa*. And, as a matter of fact, a house is assessed to the rates and taxes neither more nor less because it may happen to be either freehold or leasehold, but is assessed in proportion to the rent it is considered by the assessment committee to be worth.

The ground-rent, when there is one, forms only a part of the assessed rateable value; but, as the rates are already paid upon the whole of this assessed value, they are paid upon the portion forming the ground-rent—hence every ground-rent is already rated.

As an illustration of this take two similar houses, each worth and letting at £25 per annum plus taxes, but the one freehold, and the other leasehold subject to a ground-rent of,

say, £5 per annum. In the parish valuation list each of these houses will be entered as of the same rateable value, probably £20 per annum, upon which estimate the local rates are paid. The rateable value is put at the reduced figure of £20, because it is considered that this is all the landlord gets after paying for repairs, insurance, &c., which are estimated at £5 per annum.

Parenthetically it may be noticed that the income-tax is paid on the gross rental, £25, although it is acknowledged that the net income is really only £20—an injustice to which I believe no other class of income-taxpayers is subject.

However, returning to our comparison, we see that the same amount of rates is paid upon each house, and if a special rate is to be levied on the £5 ground-rent on the second house, two properties of the same value will be rated, the one at £20 and the other at £25. In other words, the £5 ground-rent on the leasehold house would be rated twice over.

It has been alleged that the “taxation of ground-rents” would benefit occupying tenants, and it will be convenient here to consider that part of the subject.

There are two systems of letting houses, viz., 1st, with the taxes payable by the landlord, as in most lettings of small houses and flats, and, 2ndly, with the taxes payable by the occupier. For my illustrations in this Paper I have purposely taken a class of house which is as often let one way as the other. The landlord in either case may be a freeholder or leaseholder, the tenant does not ask which and does not care. But he does ask whether the rent includes the taxes or not, and if it does, he will give more rent than if it does not. For instance, the house assumed to let at £25 a year if the tenant pays taxes, would let at about 12s. or 12s. 6d. a week, that is over £30 a year, were the landlord to pay the taxes.

In the case where the taxes are paid by the landlord, the rating of the ground-rent, if there is one, would not affect the occupier. He has nothing to do with the taxes or the ground-rent, and, as before said, would probably never have inquired whether there were a ground-rent on the house or not.

Likewise, in the case where the taxes are paid by the occupier, it is equally clear that the mere taxing of ground-rents would not affect him, as he has nothing to do with the ground-rent, and in like manner would not necessarily know whether there were one or not.

In either case, if there is a ground-rent, it could be at any time extinguished, without the occupier knowing, by the ground-landlord buying up the lease or the leaseholder buying up the ground-rent; and if there is not a ground-rent one could be at any time created equally without the occupier's knowledge, and this is being done to a great extent every day.

Further, in the case where the taxes are paid by the occupier, if the landlord were a leaseholder we should have the curious fact of his getting an allowance from the freeholder for rates, though not paying any himself. But, any way, his shifting on to the freeholder of a part of the rates he had himself agreed to pay would not reduce the rent to the occupier, as this would still be governed by supply and demand.

Mr. CHANNING's proposal, however, if enacted, would of course affect occupiers during the period of their present agreements, but then that is not a proposal for taxing ground-rents merely, but affects occupation-rents as well. In other words, it is a measure to allow occupiers as well as lessees to repudiate any agreements they may have entered into with their immediate landlords to pay the whole of the rates. Really such a proposal hardly deserves serious discussion,

and it may well be asked whether it has the approval of those leasehold capitalists who have subscribed to the agitation, as they would be hoist with their own petard.

The occupying tenant, who now pays rates, would be able to deduct a portion of such rates from his landlord, be he leaseholder or freeholder, notwithstanding his contract to pay the whole of them himself. This would be unfair to all landlords, but the effect would in most cases be only temporary, as a landlord would of course take the earliest opportunity of raising the rent *pro tanto*. But in the case of houses and shops of the better class, which are generally let on 21 years' leases, the injustice caused to the landlord would sometimes be very considerable.

We have seen that a leasehold property bears its full share of taxation as a whole. Legislation could therefore, it may be assumed, only affect the distribution of that taxation amongst existing interests, and the proposal, as a matter of fact, resolves itself into a question of forcibly altering the agreements which ground-lessees and their ground-landlords have entered into between themselves.

The most favoured proposal now appears to be that the lessee shall be relieved from paying the taxes on the ground-rent he pays to the ground-landlord, notwithstanding that he has agreed to pay the rates and taxes upon the whole rent, including the ground-rent. The relief is to be afforded either by the ground-landlord being assessed direct, or by the lessee being empowered, on paying the ground-rent, to deduct therefrom the rates paid by him thereon.

This would work as follows :—Suppose a house to be let at 12s. 6d. a week if landlord pays rates, or £25 a year if occupier pays them, the net rateable value would be put, as before shown, at £20 per annum or thereabouts, it being calculated that this amount would be left to the landlord after rates, repairs, &c., had been paid. If this landlord be

a lessee holding at a ground-rent of £5, he pays this £5 clear of rates, and has £15 left for himself, also clear of rates, repairs, &c.

It is now proposed that the lessor should pay the rates on the £5 direct, or allow them to the lessee out of the ground-rent. If the rates be 5s. in the £ their total on the house would be £5, and the proportion on the ground-rent £1. 5s. Hence the ground-landlord would receive only £3. 15s. instead of £5, whilst the lessee would get £16. 5s. instead of £15.

Similarly, if the ground-rent had been 5s. on this house, the deduction would have been 1s. 3d., leaving the ground-landlord 3s. 9d. instead of 5s., and the lessee £19. 16s. 3d. instead of £19. 15s. I shall have occasion to refer again to these examples.

It may, in passing, be remarked that many leaseholders are capitalists who buy leaseholds as an investment. We can therefore discuss this question calmly as one between two classes of business men, putting aside the sentiment that has been introduced by some who represent the lessors or ground-landlords as all millionaires, and therefore a class whom it is allowable, if not laudable, to victimise, whilst the lessees are all portrayed as their down-trodden victims.

So far from this being the case, there are hundreds of thousands of the industrial and middle classes who have small savings invested in ground-rents through the instrumentality of benefit and insurance societies, not to mention innumerable private investors, and trustees, who purchase ground-rents, with funds both large and small, as a safe investment, giving little trouble, and who really can ill afford to be victimised.

We will first consider the question of taxing existing ground-rents, and afterwards of ground-rents that may be created in the future, as the questions are different in prin-

ciple, and the arguments put forward in support of the one are inapplicable to the other.

THE "RATING" OF EXISTING GROUND-RENTS.

In reference to existing ground-rents we are at once met with the fact, before referred to, that the lessee has solemnly agreed, under hand and seal, to pay all the rates and taxes himself (property-tax always excepted), and has, in consequence, acquired the house for less than he would otherwise have been willing to pay for it. Legislation throwing any portion of this payment on the lessor would therefore be a "statutory violation of an express and deliberate contract of indemnity."

One would suppose this to be a sufficient answer, but, in reply, it is alleged that new imposts, that were not contemplated when the leases were granted, and which benefit the lessors' property, have been thrown on the rates, and Government is appealed to, in the name of justice, to go behind these deliberate contracts and permit one party to repudiate his obligations at the expense of the other, in spite of the fact that everyone taking a lease is aware that he is entering into a speculation, and represents that he is prepared to take his chance of unexpected loss as well as unexpected gain.

If the State ought to go behind the covenants of a lease to inquire whether the lessee, when taking it, omitted to provide in his calculations for any class of rates subsequently imposed, ought not the State, *per contra*, to take into account the benefits the lessee has enjoyed from the expenditure of those rates? If we may assume this expenditure to have been judicious (and if it has not been the lessees are responsible, as it has been mainly under their control) the benefit will have frequently outweighed the cost, and, as a matter of fact, expected improvements are generally looked upon, in

spite of the rates they foreshadow, as increasing the prospective value.

The inference therefore is that, in many cases, if improvements that are subsequently made could have been foreseen by both parties to the lease when negotiating its terms, a higher ground-rent would have been asked and willingly given. Consequently, in those cases, if either party has suffered from the "unexpected," it is the freeholder, because, not foreseeing the improvements, he did not fully gauge what we may call the "latent value" of his property when letting it on lease, and the lessee gets the unexpected advantage.

Without stopping to discuss further the justice or expediency of going behind these contracts, all will agree that, if we do so in order to give redress to one party, who is alleged to suffer from the "unexpected," we cannot refuse similar redress to the other party; and upon examining their mutual relations, which I now propose to do, we shall find many cases where the lessors will have counter-claims equalling, and sometimes far exceeding, the claims of the lessees.

The case put forward as justifying the taxation of existing ground-rents may be shortly summarised as follows:—

1st. That rates which were not anticipated by the lessee when he took the lease, have been since imposed.

2ndly. That these imposts are for improvements increasing the prospective value of the lessor's property.

Before going into details it may be pointed out that, granting lessees have equitable claims in respect of new improvements, such claims can have no uniform relation to the amount of ground-rent payable. The ground-rent is fixed arbitrarily; for instance, it may be £5 on one house, 5s. on a similar house next door, and a peppercorn—that is nothing at all—on a third, all being of the same value, with the leases falling in at the same date. The lessor of each

house would benefit from the alleged improvements to the same extent absolutely, not relatively to the ground-rent. So it would be simply absurd to impose in the name of justice any direct assessment on lessors, or authorise any deduction by lessees, calculated at so much in the £ on the ground-rents. Any compensation for improvements, to be just, must therefore in the first place be relative to the unforeseen benefit realised or expected to be realised, and will vary in different districts and at different periods.

To assess existing ground-rents specially to the local rates, which may be taken at 5s. in the £, would reduce the net income by one-fourth. And as their value, where the unexpired terms are still long, varies approximately in proportion to the income, it would take away nearly one-fourth of that value from their present owners, and transfer it to the present lessees without rhyme or reason.

If we analyse the rates resulting from "Improvements," which form but a small portion of the whole expenditure of rates and taxes, we shall usually find them composed of (i.) interest on loans outstanding, (ii.) current expenses for maintenance and working, and (iii.) instalments of loans repaid.

As the lessees get all the present benefit from the improvements it would hardly be disputed that they should pay the interest on the loans raised to defray their cost, as also the expense, if any, of maintenance and working.

With reference to the question of instalments of loans repaid, which is more complex, it may be premised that, as many improvement works are liable to waste, or to become obsolete, or as a neighbourhood may go down, it is wise that all public debts incurred for such purposes should be gradually paid off, or they might accumulate until they became overwhelming. This is the course usually adopted, the repayments of such debts being generally spread over many years, so that

the annual charge for the purpose is as a rule very trifling, indeed hardly appreciable. Yet, it is only in respect of this insignificant charge, which is very difficult to calculate, that the ground-landlord can be alleged to take benefit, if any, and then only at the end of the lease.

Now, the normal position as to loans at any given date (say when a lease is taken) is, that the current rates are contributing toward the repayment of money borrowed in the past. Accordingly, as this money is paid off, the portion of the rates required for the service of these loans decreases, and ultimately disappears. In practice, the parties to a lease have made their calculations on the rates for the time being. They have formed no estimates of increase or decrease, and have gone into no calculations as to whether loans were being repaid out of the rates or not.

The lessee takes it for granted that if new rates for improvements be imposed there will be some corresponding benefit, direct or indirect, and that the benefit may be set against the rate, so that he need not trouble about the matter.

Whenever loans were being repaid at the time a lease was granted, the rates, on which the lessee will have based his calculations, will have been swollen by including repayments of capital, which in time disappear. Hence the rates were taken on too high a basis, and will have prevented so high a ground-rent being required by the lessor, and willingly given, from the force of competition, by the lessee, as otherwise would have been the case. This is an advantage to the lessee which was not calculated upon, and, on the assumption that legislation is to decree compensation between the parties for points they overlooked when making their bargain, the lessor will be entitled to compensation from the lessee in respect of those old loans. It is only in respect of loans for later improvements that compensation may be claimed by the lessee.

Granting a case where the lessee should be compensated, the next questions are, When shall that compensation be paid? How shall it be calculated? And what equitable counter-claims may arise?

As the expenditure is incurred without regard to the lessor's wishes, and without his control, whilst he gets no benefit in the shape of present income, and, if any whatever, only as an addition to the capital value of his property at the end of the lease, it is not in any case right to make him contribute, *at present*, to the rates in respect thereof. Any compensation should be calculated at the end of the lease, when he first enters into the enjoyment of the benefit.

Should the lessor, however, be compelled to contribute to the rates during the course of the lease, such contributions must be looked upon as investments of capital, taking the place of the capital raised by loan, and on which he is entitled to receive interest from the lessee.

This leads up to the second reason why any compensation should be by valuation at the end of the lease, and not by contribution to the current rates. And that is the intolerable inconvenience and annoyance that would devolve upon both lessor and lessee in calculating the contributions.

This would take somewhat the following shape, and in some particulars would vary every quarter:—

Eliminate proportion of rate per £ appropriated to paying off improvement loans raised since date of lease.

Debit lessor with this proportion of rate, probably fractional of a penny in the £ on the rateable value.

Credit lessor with interest on all previous contributions, they being, as already shown, so much capital sunk by him on which the lessee takes the present benefit.

Credit lessor with decrease, if any, in rate, in respect of

loans that were being repaid when the lease was negotiated.

Credit lessor for waste.

Credit lessor, if works prove a failure or become obsolete, with a refund in respect of any payments that may have been made on the assumption that he would reap a benefit from them at end of term.

Surely no more need be said to show the inconvenience of making compensation by contributions to the current rates. The balance would not always be in favour of the lessee, and if it were it would generally be too small to be worth calculating. But whilst doing him no good, it would be very hard upon the lessor, or owner of the ground-rent, even were the balance in his favour, unless it were very large, because one of the principal reasons why people purchase ground-rents is that they are an investment giving very little trouble, and it is partly on this account that so high a price is paid for them.

For these reasons, therefore, the compensation, if any, should be by way of valuation at the end of the lease, and a few considerations may now be offered as necessary to be kept in view in assessing that value.

The original cost of any works could not be taken as the basis of compensation, because the improvements might be worn out, obsolete, or obsolescent. Hence compensation should be based on their then present proportionate value to the property in question. Account would thus have to be taken of the new improvements to which the property had contributed since the lease was granted.

Rebate should be given in respect of loans still outstanding. It is conceivable that this rebate might exceed the apportioned value of the works to the property, and bring the balance in favour of the lessor, because he might be taking over a liability greater than the benefit received.

As a possible instance of this, let us imagine our present drainage system, which many think is radically wrong, being superseded by some other. Landlords upon the leases expiring would have to take over debts contracted by their tenants from which they might get no benefit.

Against the assessed present value of the works should be set the benefit the lessee has derived from them, and, as already shown, this might often exceed the original cost and, *a fortiori*, the present value. This of itself would rule out many claims entirely, and even bring the lessee in debt.

It is no sufficient answer to say that the lessor does actually receive some benefit, in the value of existing works to the property, when he comes into the reversion; because the case for taxation rests on the "unexpected," and, as before shown, if the benefit has been greater than the rates paid, there was a "latent value" when the lease was granted which, if duly appreciated, would have commanded a higher ground-rent.

With reference especially to the *Main Drainage Rate*, which is often referred to as an improvement for which the lessee should be compensated, the first condition, viz., "that the outlay should have been unexpected," would exclude all London leases taken since the present system was inaugurated some 40 years ago—that is, under the Act of 1848, by the Metropolitan Commission of Sewers, the precursors of the Metropolitan Board of Works.

Moreover, as the scheme carried out by the Metropolitan Board of Works had been long previously regarded as a necessity, we should have to go back far anterior to the date mentioned to reach a time when some charge of the sort was not anticipated.

The sewerage of London has indeed been an ever-pressing problem for centuries. For example, we read that in 1290 the exhalations from the Fleet overcame the incense

burnt at the altars of the neighbouring churches. There is probably not a single old lease in existence the original grantee of which, though he might not have anticipated the particular system now in operation, did not realise his liability to the nuisance, insalubrity, and expense of a silted river, filthy ditches, treacherous cesspools, rumbling night-carts, &c.; consequently the main-drainage rate is only an old expense in a different and, presumably, an improved form.

On these grounds alone there are very few, if any, lessees who would not be barred from any equitable claim in respect of main drainage.

Some reference may be expected to the School-Board rate; but, seeing that the bulk of it is for working expenses, maintenance, and interest, it can to only a very small extent, if at all, be looked upon as a permanent improvement to the lessor's property. In so far as it may be, it comes within the principles applied to improvement-rates.

Whatever may be the temporary incidence of this rate, it must, by the rule that the consumer bears the cost of production, eventually fall upon the occupiers as a body, either in the shape of extra rates or extra rent. If occupiers as a body choose to have a School Board and quasi-free education, they as a body cannot escape higher rates or higher rents; though it may be unfair to those who have no children, or who send their children to private schools, to be compelled to pay toward educating other people's children. This unfairness, however, is inherent in all such measures.

Having dealt with the specific reasons most frequently alleged for tampering with existing leases, it may be well now to take a wider view, on the assumption that we are entering upon an era when the State is to step in and cause all contracts to be adjusted by "wisdom after the event."

There are cases where from general causes properties depreciate during a long lease, but fortunately in the majority of instances they have improved in value, and sometimes this improvement has been enormous. For example, a house, which on land taken at £5 ground-rent may be built to let for £25 a year, may, before the lease expires, be worth £250 per annum. If the lessor had foreseen this would he have let the land for £5 a year? Certainly not. Ought not the lessee therefore to be compelled to compensate him for having made so disastrous a bargain?

Conversely, when a property depreciates it may be equally asked whether the lessor should not compensate the lessee for his bad bargain, although at the end of the lease the lessor will have a less valuable reversion than he anticipated.

The common-sense answer to both these questions is of course "No," because each party exercised his judgment and took his risk at the time; but by our hypothesis this reasoning is excluded, and the answer must be "Yes."

In the illustration just cited the owner of the land, it is true, gets a benefit from its increased value at the end of the lease, but that is not the question. The point is, that during the lease he reaps no benefit from the appreciation in value of the property, as he would have done had he, for example, himself built on the land instead of letting it to another. The position at the end of the lease becomes the same as if he had built himself.

It would be interesting, had we time, to study the relations of the currency to existing leases. One circumstance may, however, be mentioned. Some 40 years ago, that is, about the time of the inception of the Metropolitan Board of Works, great discoveries of gold took place in Australia and California, which, it is generally agreed, contributed to the subsequent high prices and high rents. Holders of old leases took these enhanced rents, but their ground-landlords

had no share in them, and only received what they were strictly entitled to by contract, though that sum had less purchasing power than when the leases were granted, so that they were actually losers by the high prices. If we are to redress the "unforeseen," here again lessors are entitled to compensation, and often to an extent which would far outweigh all claims the lessees could morally substantiate.

The only case in which I can imagine real injustice arising is in the event of the cost of permanent works being paid within a very short time ; but as lessees have the voting power they can prevent this, and it practically (in London at least) never occurs. The danger is rather the other way—that such loans may not be repaid so rapidly as "improvements" waste, or become obsolescent, throwing debts on the lessors without equivalent benefits.

That the portion of our present rates which is being applied to paying for permanent improvements is insignificant may be seen by reference to the recent accounts of the Metropolitan Board of Works. Take the year 1887. For each penny in the £ in their rate they realised in round figures over £125,000. Their repayments of debt for that year amounted to £28,866.13s. 4d., or less than $\frac{1}{4}$ d. in the £. There were in addition repayments by the School Board, Asylums Board, and various local bodies, of moneys borrowed through the Metropolitan Board of Works, to the extent of £310,119.16s., or nearly $2\frac{1}{2}$ d. in the £. Much of this had not been expended on permanent improvements, but for such rapidly-wasting purposes as wood, asphalt, or granite paving, fitting and furnishing buildings, alterations, dust-destructors, and so on. The moneys thus repaid to the Metropolitan Board of Works were, in addition to further sums borrowed, lent again for similar purposes.

If existing contracts are torn up, and the direct and in-

direct consequences are to be calculated of changes which the parties did not anticipate, there would be no end to the questions which might arise, but we can see that, in the majority of cases, the balance either way would be microscopic, though in not a few instances it would be greatly in favour of lessors.

To adjust these microscopic claims with theoretic exactitude would necessitate keeping account, by both parties, of public loans, improvements, and no telling what, as affecting any particular property, during the whole term of a lease—that is, for generations—not merely for the purpose of making a claim, which one might think not worth the trouble and worry, but in order to be able to repel an unjust or excessive claim, from the other side. At the end of the lease, surveyors and accountants, possibly solicitors, counsel, judge, and jury might have to be called in to decide whether A should pay B, or B should pay A an amount often varying, when determined, from one farthing to a ten-pound note.

These outstanding questions would greatly damage the property-market, as purchasers would not know what entanglements they might be running into.

Every apparent grievance has some counter-benefit, direct or indirect, and the natural conclusion is, as every practical man of business knows instinctively, that the parties negotiating a lease are wise not to waste time in splitting imaginary hairs, and that any interference with our present give-and-take system would do more harm than good, and entail an amount of care and trouble upon both parties, and their successors, that would be perfectly unendurable.

It cannot be gainsaid that if the lessee is to have legislative relief from a bad bargain, the lessor should in common fairness be treated with the same consideration. Were this possible in respect to leases, why not for all kinds of contracts? The logical sequel would be that no contracts

whatever would be entered into, because none would be binding, and complete stagnation to enterprise would be the natural result.

THE "RATING" OF FUTURE GROUND-RENTS.

Some, who admit that the taxation of existing ground-rents would be unjust, fancy that, as a great outcry has been raised against the present system, it might be advantageous, as a matter of "public policy," to enact that in future all lessors shall pay local rates proportionate to their net receipts, even though the lessees may be willing to undertake the liability, if compensated, as they always are, by having to pay a lower rent.

In order the better to illustrate the working of this proposal we will introduce an underlessee, thus, suppose

A, the freeholder, receives from B a ground-rent of £5 per annum, net.

B, the lessee, receives £10 a year improved ground-rent from C, clear of rates, pays A the £5 and has left £5 per annum, net.

C, the underlessee, receives £25 a year rack-rent from D, clear of rates, pays £5 a year for repairs, &c., and £10 to B, leaving himself £10 per annum, net.

D, the occupying tenant, pays all rates, and £25 a year to C, as rent.

It is proposed to declare any future contract between the parties void which might provide for paying the rates otherwise than proportionately to the net rents they respectively retain; that is, on £5 by A, £5 by B, and £10 by C; whilst D, the occupying tenant, would be precluded from agreeing to pay any rates at all, for it would amount to preclusion if, though he were to agree to pay, the law said he might at any time afterwards repudiate that agreement.

All parties, knowing upon what system the rates would

in future have to be paid, would adjust their contracts accordingly; for example, assuming the rates for the year to be 5s. in the £ on the net rateable value of £20, they would amount to £5 per annum, and D would pay £30 a year to C, including rates, instead of £25 a year plus rates, as at present; C would receive £30, pay repairs £5, rates £2. 10s., and improved ground-rent to B £12. 10s., leaving him £10 net as before; B would receive £12. 10s., pay rates £1. 5s., and rent to A £6. 5s., leaving him £5 a year net as before, whilst A would receive £6. 5s., pay £1. 5s. in rates, retaining £5 a year as before.

It is said that, as the final result to each would be the same, there would be nothing unjust as between the parties, which may be admitted. But from this it is deduced that no one would be injured by the proposed arrangement, which is a great mistake, as the extra trouble in calculating and apportioning the rates would injure everyone concerned, seeing that any increase in the work of managing a property depreciates its value.

In carrying out this plan the first question is, How will the authorities collect the rates from the different parties? It has been gravely said that all might be separately assessed. But this would incur the totally unnecessary expense of duplicate assessment lists, &c.; such lists as it would be next to impossible to correctly settle, and which would be continually varying by the respective interests changing.

We already have a more economical and practical method in force in collecting the income-tax, viz., D pays the whole tax and deducts it from the rent paid to C, C deducts on the portion of the rent he pays to B, and B in like manner deducts on the portion he pays to A. This method would, it may be assumed, be followed in collecting the rates.

A great element in the value of ground-rents, however, is the fact that they give little trouble to collect, but that

trouble would probably not be half what it is at present were it not for the income-tax allowances. The great fluctuation, however, in this tax, and the fact that it is not applied to local purposes, may be reasons for preventing the parties from contracting between themselves as to its payment, but these reasons do not exist with regard to the local rates.

On the other hand, the trouble caused by the income-tax is trifling compared with what would be caused by a similar system for the local rates. The rate of income-tax in the pound is the same for the whole year, it is also the same for every parish, and it seldom consists of a mixed number, *i.e.*, a whole number and a fraction. The rate per pound is therefore known to all parties, without the production of receipts or other evidence, and it is quickly calculated. The local rates, however, vary, not only within the year (taking for example 1*s.* 2 $\frac{3}{4}$ *d.*, 1*s.* 2 $\frac{3}{4}$ *d.*, 1*s.* 3 $\frac{1}{2}$ *d.*, and 1*s.* 3 $\frac{1}{2}$ *d.*, the rates recently charged in four successive quarters in the parish of Hackney), but they vary with each parish, and are often represented, as in these instances, by mixed numbers. Evidence of the rates per pound must therefore be produced for each deduction of rent paid between the parties, say, between the tenant, perhaps one or more underlessees, the lessee and the freeholder. In addition, many payments would necessitate a complex calculation, for example, £3. 2*s.* 6*d.*, £6. 5*s.*, and the like at 1*s.* 2 $\frac{3}{4}$ *d.* in the pound,—all taking time and involving the risk of error.

Under this hypothetic system the rents of £6. 5*s.*, £12. 10*s.*, and £30, although leaving, after paying rates, the same net receipts of £5, £5, and £10 as under the present system, would, in consequence of the trouble given, be worth less to the respective recipients, A, B, and C. They must therefore all lose, unless D, who would also have extra trouble, pays more as rent to be divided amongst them, than he now pays as rent and rates together.

The ultimate result would be to distribute the loss, not necessarily *pro rata*, among all parties. A somewhat higher rent would be paid by D, in common with other occupiers, than he now pays for rent and rates; but the increase would be insufficient to fully compensate A, B, and C, so they could not provide so great a supply of land and houses as they otherwise would. This would mean less business and less profit to them, and also less labour employed and less business done in building, brickmaking, and all the numerous trades which contribute to the production of a house. Hence we see that practically the whole community would be injured by taxing ground-rents even in the future, and all for—what?

It is worthy of note that this “taxing future ground-rents” would not prevent a recurrence of the ills alleged to result from the present system. Future ground-rents would be based on the assumption that the ground-landlord would pay such and such a portion of the rates. The measure would not however provide for compensating the lessees, should new improvements be introduced, not contemplated when negotiating a lease, and this may be taken to measure the agitators’ real estimate of the alleged injustice of the present system,—it has no existence as a matter of fact.

It is to be hoped that this useless, uncalled-for, and mischievous proposal of taxing all future ground-rents will be strenuously opposed. The fact that it would not be unjust as between the parties tends to disarm opposition, and some, not realising the injury it would inflict upon all, are disposed to let the agitators carry it as a sop, thinking, doubtless, it might be painful to their feelings, should the question of taxing ground-rents, from which they promised so much, entirely drop, without their being able to say “something has been done,” even though that something be only a meddlesome make-believe.

The "rating of building land," the so-called "unearned increment," and the question of "goodwill," being often mixed up with the "taxation of ground-rents," I should have liked to deal with them, but the time at my disposal only permits me to say that they are all totally distinct from the subject of the taxation of ground-rents, and their association with it can only be productive of mystification.

Mr. E. RYDE (Past-President) had great pleasure in moving a cordial vote of thanks to the author of the Paper. He was very glad that this subject had been brought before the notice of the Institution, as he thought it one of the most legitimate that the Members could discuss. As far as he could form an opinion from merely hearing the Paper read, most of the points connected with the subject had been touched upon in a manner against which he had nothing to say. He hoped the Members of the Institution would announce in an unmistakable manner to the outside public, who did not understand this question so well as they did, that there was no such thing as a ground-rent escaping rating. He was afraid that a large number of persons thought there were ground-rents finding their way into the pockets of some of the large landowners which entirely escaped taxation. He would like this Institution to pronounce itself unmistakably against that view. It was obvious that ground-rents were rated now. A ground-rent was a part of the rental value of a house. Rate the house at its full annual value, and the land on which it was built was included. There were houses within half a mile of the Institution exactly similar in every respect, some of which were held of the freeholder at peppercorn or shilling ground-rents, some at £25 a year ground-rent, and others at £50 ground-rents.

What was the reason that the peppercorn and shilling leases existed? Go to Pimlico for examples. The Duke of WESTMINSTER, when Marquis of WESTMINSTER, let a large tract of land to the late Mr. THOMAS CUBITT for a fixed ground-rent, both sides having gone into the calculations necessary for the purpose. The freeholder was glad to get as much for his land as he could. Mr. CUBITT paid as much for his land as he was bound to pay owing to the competition for land. He was very successful in his building operations, and got the land all covered. He was able to put upon portions of the land only, the ground-rent he had agreed to pay the Marquis for the whole. The bargain was that when he had secured the whole of the ground-rent he might take up leases of any of the land that remained at peppercorn or shilling ground-rents. Accordingly he let the land which remained to people who would build, at ground-rents which became his property during the remainder of the term of the lease. It suited the purpose of some men to pay the leasehold ground-rent of £25 a year, while others preferred to pay 25 years' purchase to extinguish it, so that they might stand in Mr. CUBITT's shoes, and take the lease direct from the freeholder at a shilling a year, instead of taking an underlease from Mr. CUBITT at £25 ground-rent. As land improved in value higher ground-rents were created amounting to £50 a year. He assumed, for the purpose of his illustration, that all these houses were of equal annual value to a tenant to occupy for residential purposes, and were all rated alike at the full value.

He supposed that the proposal was that, where there was a shilling a year ground-rent, the shilling should be taxed or rated to the freeholder; that where there was £25 a year, that sum should be rated; and where £50, that sum should be rated. How was a rating authority to find out all this, and, when it was found out at great trouble and

expense, who was to benefit by it? Moreover, it was competent at any moment for a man who paid £50 a year to Mr. CUBITT, to buy the £50 a year ground-rent and stand as the holder of the original lease from the Marquis of WESTMINSTER at a shilling a year. What was then to happen? Was the rating of a £50 ground-rent, because there was once a £50 ground-rent paid on that house, to be perpetuated throughout the whole length of the term? He might refer to other instances. The premises of the Institution were held, he thought, at £250 a year. They were worth a good deal more than that, by reason of the money which had been spent in improvements. Ought the freeholders of whom the ground was rented to be rated on the £250 a year and the Institution on the balance?

He would mention a case which came under his own notice within the last two or three months—the case of a house he had had to buy. It was an old house held of the freeholder by a lessee, at a rent of £200 a year. A railway company made a station in its vicinity, and the old house became quite unfit for the situation. The freeholder said to the lessee, “If you will pull down this house, and build a new one, and will pay me £200 a year as a ground-rent, I will grant you a long lease.” The new house was built and let at £600 a year rent. It was now let on an underlease at £1,200. What was to happen in such a case? What was one to rate? There was the original rent of £200, the £600 which the lessee had expected to get, and the £1,200 which he did get. The house might not be rated at £1,200, but, if not now, he thought it very soon would be. What, in the name of common sense, was the good of stirring up the question, and interfering, when one had now at the present time all that one could get?

Why should there be any alteration? Were rents already created to be dealt with, or only those to be created?

Of course it would not be a bad thing for surveyors if rents already created were to be dealt with and compensation awarded in respect of the change ; but, to him, the proposal seemed to be nonsense. A man who took a piece of land at a ground-rent knew he had to pay that rent for a long time ; he built his house and took his chance. He entered into a contract to pay this ground-rent during the whole of the term, and the freeholder granted a lease on condition that he did so and spent so much money in building a house. He supposed it was argued that the rates and taxes might increase, and in that event the poor lessee would be damaged unless the landlord was rated for the ground-rent ; in which case the landlord was caught, as well as the lessee, in this increase of rates. But he contended that, two men having entered into a contract to do certain things, to interfere between them by an Act of Parliament was dishonest and unjust. Surely, if that were right, it would be equally right for the freeholder to get some benefit when property went up in the direction he had indicated in regard to the £1,200 a year rent. The freeholder got his £200 a year, but no more, throughout the whole length of that lease, although somebody else was getting £1,200 a year.

Then it was said that landlords, being such wealthy people, had such means of exacting from their lessees exorbitant terms that the lessees could not look after themselves. That was not his experience of the London lessees. A body of men better able to look after themselves, whatever else might be thought of them, he never met with in his life. His experience might be totally different from that of everybody else, but to tell him that a builder who was going to take land from a landowner for the purpose of building a large number of houses wanted any protection from the legislature was to tell him something he did not believe, and never should believe as long as he lived.

Having indicated the line which he thought the discussion should take, he would again express a hope that the Members of the Institution would give utterance to the opinion that it would create the greatest possible mischief if any such alteration in the law as this were attempted. Having had a good deal of practical experience in rating property, he was no way, in the first instance, of assessing the rate, and, in the next, no easy method of levying it. He saw nothing but wrangling and contention in assessing the rate, extra trouble and expense in collecting it, and no satisfaction to anybody if such an alteration were to be attempted. He was perfectly certain that equity did not require any such alteration ; practical men would not ask for it, and there were no grounds for assuming that benefit would accrue to anyone.

Mr. A. GARRARD (Fellow), after seconding the vote of thanks, said that the subject was one in which all surveyors were interested, but which, he thought, the general public did not very well understand. In any legislation for dealing with the question he thought many difficulties would arise. What was called latent value had been referred to in the Paper. In the case of property in the suburbs of London it was commonly found that, ten or fifteen years after it had been built upon, the population of the neighbourhood increased, and the value of property became proportionately improved. Houses originally built to let at £60 a year with a ground-rent of £10 would, after a few years' interval, let for, perhaps, £70 or £75 a year. The whole of this increase in value was due to the land and not to the buildings on it. The bricks and mortar put upon the land had not increased in value by age, but deteriorated. Thus, the lessee who took such land at a £10 ground-rent, and within ten or fifteen years got from his tenant an increased rental of £15 per annum, reaped a greater profit from the land

than the owner. Another point was the question of improved ground-rents, which he thought was not very commonly understood. To attempt to rate these was, he maintained, a manifest injustice. An improved ground-rent was an investment of an exactly similar nature to a Government terminable annuity. A man expended his money in the purchase of it: he got a large increase in income for a specified time, but at the expiration of that time the income ceased, and the transaction was at an end in just the same way as in the case of an improved ground-rent. An improved ground-rent was the speculator's profit. A man who took building-land to develop could scarcely make a reasonable profit unless he doubled his ground-rent, which was not at all an exorbitant rate of increase. Take, for example, a man who had a plot of land upon which he must create £100 a year ground-rent, and assuming that he built upon it twenty houses, each worth £60 a year, each of these houses carrying a ground-rent of £10. Upon ten of the houses he would get £100 a year. The leases would be granted direct by the freeholder to the builder, who thus secured the whole of the rent, and was entitled to the other ten at a peppercorn rent. On these he granted under-leases at £10 a year ground-rent each, making a profit of £100 a year, which he might sell to a capitalist, at 20 years' purchase, for £2,000. This was his profit on the speculation, less any expense he had been put to in carrying it out. Anybody buying these ground-rents had no interest in any improvement of the locality. Money expended in improvements did him no more good than it did the owner of the terminable annuity if the funds rose from 98 to 102. His rent was amply secured, and it made no difference to him whether the houses let for £10 more or £10 less each per year. A ground-rent, under these conditions, was nothing more than a terminable annuity, and there could be no

justification for taxing such rents ; neither could he see any good which could arise from altering the present state of affairs in any such way.

If ground-rents were to be taxed and improved ground-rents (or rather terminable annuities) to be free, in the above case ten men paying a rent of £10 each on one side of the street would be entitled to deduct a portion of their rates from the rent payable to their landlord, and ten men on the opposite side of the street also paying a rent of £10 each would not be entitled to make any deduction.

Having carefully thought the question out, he did not believe that any law could be framed which would mend matters, or which would not interfere seriously with the building of houses, even where they were really wanted. The demand for houses and the value of ground-rents were matters well understood now, and he thought any attempt to interfere with the existing state of affairs would be as much to the injury of the lessee as to that of the lessor.

Mr. J. F. TORR (Visitor) said he hoped he might be pardoned if he failed to appreciate the whole of the technical difficulties which had been raised ; but he would ask the Members present to take a somewhat broader view of this question than that from which it had been dealt with by the previous speakers, who agreed identically with Mr. BEKEN in being quite certain that no grievance whatever existed, that nothing whatever was wanted, and that any change would be mischievous and futile, and injurious to the public. It had even been said, indeed, that if a tax on ground-rents benefited anybody at all, it would certainly benefit the land-owner. Then, he asked, why were the landlords, their friends and their agents, so anxious that no taxation of ground-rents or ground-values should take place ? The discussion had turned very much upon the point of the

iniquity or injustice of taxing ground-rents, and three gentlemen had expressed decided opinions on the point, but, curiously enough, their opinions were diametrically opposed to those of three equally eminent men, ADAM SMITH, JOHN STUART MILL, and THOROLD ROGERS, and, in fact, of all the great political economists, who agreed in saying that a tax upon ground-rents was the fairest tax which could be conceived. He contended that such a tax would violate no law of justice, and was entirely in accordance with the spirit of political economy.

A tax upon ground-rents, artificially arranged as they were at present—with the evils of the leasehold system not yet mitigated, and with all the difficulties of peppercorn rents and shams and pretences—would, though perfectly just, be futile, because it would not produce enough money. But nobody had suggested the taxation of ground-rents only. This was not really the point at issue, and therefore this Paper of Mr. Beken's, clever as it was, was entirely beside the mark, in that it did not deal with the proposition to tax *ground-values*; which was a totally different matter.

From the arguments used by the previous speakers it would seem quite impossible that human ingenuity could frame a plan by which the owner of land (which, as the last speaker very properly admitted, received the benefit of the whole of the improvements of modern London) could be made to pay a fair share of taxation. Owners of ground in London did not contribute in any way towards the cost of local improvements by which their property greatly benefited. The occupiers paid every halfpenny, and in the case of long leases the improvements were commenced and the money borrowed and repaid, all at the cost of the occupier, without the owner ever having to put his hand into his pocket to pay anything for the benefit which he derived at the end of the lease. The landowner had been spoken of as seeing

his property passing from one tenant to another, one paying £200 and selling it to another for £600, and that other selling it to another for £1,200. And what was the landlord doing all this time but regretting that the leases he had granted prevented his participating in these profits? Then what happened at the end of the lease?—the whole increased value was swept into the hands of the landlord, without any compensation whatever. But this was regarded as a mere bagatelle. The house, it was said, was built years ago, and was never intended to last so long a time—it was, at the expiration of the lease, a ramshackle thing which anybody would be glad to have carted away, so that he might build a new one. That was the theory. But what was the practice? Repairing leases had been imposed on the tenants, and all through the tenure of those leases the tenants had been, in many cases, obliged to put in all the latest improvements, such as bath-rooms, electric bells, and so on. Everything had been done to keep the houses in “good and tenantable repair,” and, if it were desired to sublet one, the incoming tenant would only take it with the modern improvements introduced. Meanwhile, the landlord sat still and did nothing. At the end of the sub-leases, in some cases, improvements were required from the incoming tenants; even to put a storey on was not an unusual demand, and electric bells were a very common requirement. Then there were dilapidations to be made good by the outgoing tenant. Then came an increased ground-rent of perhaps some £20 to £50 a year. Then an increased rack-rent to a new incoming tenant. The tenant was told, “My dear sir, “this property has gone up very much in value. The “houses which used to let at £50, £60, £80, or £90 are “now worth £200. I cannot let you have a lease for 21 “years unless you pay me £200. If you would like to “take it for a longer term than that, as we never know

“what may happen to property, well, you shall have it “for £180.” And the last and final addition was a premium—in some cases of which he knew—a premium of £2,800 per house.

He would put this case, and would ask if the landlord really suffered, as had been said, because he could not participate in the increased value as it arose, but had to wait, perhaps, eighty years because of his leases. Was there no such thing as discounting or mortgaging property? Could not a landlord go to his bankers and get advances to any amount, and thus enhance his income just as if he chose to wait till the end of the lease? The picture of the distressed landlord had been put before the Meeting with the greatest possible skill. What had been said was very frank and very fair as far as it went, but he ventured to say it did not go far enough, and that there was another side altogether to the picture.

Again, with regard to interference with existing contracts, Government did not, in matters of taxation, regard existing contracts at all. When the income-tax was put on, the same argument was used in the House of Commons, but Sir ROBERT PEEL told the objectors exactly the same thing as COBBETT had told them—that taxation was levied by Government for the purpose of carrying on Government, by which all benefited, and that the Government could take exactly as much as it pleased. It must leave enough for the labourer to live on the land. It must leave enough, as COBBETT put it, for the farmer to till the land, “but,” as he went on to say, “although it would be hard, there was no “reason why there should be left any specified quantity for “the landlord. Production would not stop if the landlord “were overtaxed. The industry of the country would not “be ruined, even if Government were hard upon him, and,” he said, “the landlords were so loyal, that when money was “wanted for the purpose of fighting the French it was

“only too sure that the loyal race of landlords would contribute loyally in order that that fight might be carried on.” That being the case, he (Mr. TORR) need only point to the income-tax to show that in such a matter Government need not be deterred from legislation by the fear of interference with any contract existing.

Then it was urged, on the other hand, that many poor people were concerned in the ownership of land bringing in ground-rents. His friend Mr. KELLY, M.P., had once drawn a very touching picture of the poor widow and the orphans who would suffer by the tax on ground-rents, and he himself admitted that there might in some few cases be hardship. But in very many more cases there would be benefit. It was impossible to legislate for the very minute fractions. *De minimis non curat lex* was a phrase as true as it was well known, and as a very much larger number of persons would benefit than those who would suffer, this could not be reasonably looked on as an insuperable obstacle. If it were, he was sure it would be much cheaper to compensate, out of the public rates or taxes, the widows and orphans who would be affected, than to go on with the present system of grinding down the tenant for the benefit of the landowner.

He well remembered a speech of Mr. GLADSTONE's, in which, referring to the Thames Embankment, he said that what had impressed him most was the extent to which that beautiful and wonderful work had added to the value of London. He said, when he came to think of that splendid undertaking having been paid for entirely by the toiling occupiers and their sub-tenants, he thought a great injustice had been done, and he went on to say something like this:—“When I see that improvement and know what value it confers upon adjacent land, I know that it is the product of people who have an interest in the land which is but fleeting and passing, while those who receive the benefit have a permanent and enduring

“interest which nothing can destroy, and then I think a “great injustice has been committed.” Not one farthing did the owners of the properties abutting upon those improvements and increasing in value through those improvements, pay directly in rates towards those improvements. If that was the case, he thought the technical skill of the gentlemen present ought to be brought to bear on devising some remedy for such an evil. It might be that the right one had not been suggested, but surely there were many surveyors, as there were men in all other professions, who wished to do right and justice between man and man, and who would show their technical skill on the side of justice and of equity, instead of trying to obscure the question with a cloud of difficulties and purely technical objections.

The doctrine of compensation, he thought, ought really to be put altogether out of the question. He could not conceive its being gravely argued that when the State or the Municipality had to take for its own purposes a sum of money to carry on the government, this money should be taken out of one person's pocket and given to somebody else, thereby undoing all the work. Inconvenience must be placed upon somebody, and the question was whether the inconvenience could not fairly be placed deliberately on the shoulders which were the best calculated to bear it.

Mr. D. WATNEY thought Mr. TORR had fallen into an error in saying that the three gentlemen who had preceded him had said the landlord was the only person who would be benefited by a taxation of ground-rents.

Mr. W. EVE (Fellow) said that Mr. TORR's able speech was not, so far as he could gather, upon the subject which was before the Meeting. The question under discussion was the question of rating ground-rents. Those who advocated such a tax had become aware that they had been under a delusion in

supposing ground-rents were never rated before, and had had to shift their ground and adopt the expression "ground-value," which was a different thing altogether. He did not know whether Mr. TORR had himself been fortunate enough to escape that mistake, or whether he at any time advocated the taxation of ground-rents. He agreed with the views put forward by Mr. BEKEN, Mr. RYDE, and Mr. GARRARD. Even if beginning *de novo*, he should object to the taxation of ground-rents, but circumstances must be very grave indeed which could justify interference with existing contracts. But against rating "ground-values" he had not a word to say. He would advocate it rather than oppose it. It was attended by immense difficulty, he was aware, but he would not discourage those who thought they could see a way of dealing fairly with the matter.

He would suppose a case of two estates, one having a frontage on a high road, and both being of equal area—say, five acres—and the value of both, £1,000 per acre. Nobody had done anything to either of those estates, but unearned increment had developed their former value, and they had become worth £1,000 per acre. A's property had, as he had said, a frontage on the high road. B's was similar in every other respect, but, having no access to the public road, B, to gain such access, pulled down two houses worth £1,000, and then his five acres became worth £5,000. By the sacrifice of £1,000 B's estate becomes equal in value to A's. Now, he would like to know if it was necessary to revert to the time when that sacrifice took place and say B should pay in respect of £4,000 and A in respect of £5,000. There were multitudes of conditions, far more complex than this, which would all have to be dealt with. That seemed to him the great difficulty in rating ground-values. If those difficulties could be removed the taxing of ground-values, as distinguished from ground-rents, would be fair.

He strongly objected to the upsetting of existing contracts

by which ground-rents had been fixed on the same conditions as those on which one took a wife, "for better or for worse." It had been said that the landlord could easily get advances from his banker on the security of improved ground-value, but he himself knew that some bankers did not much like the deeds of such property. Again, how was it to be dealt with when someone had a life-interest in it?

He saw no objection whatever to rating ground-values in the case of new contracts, but at the same time he had never been able to comprehend the terrible hardships which lessees were said to suffer in connection with a cognate subject—the enfranchisement of leaseholds. If anyone chose to invest £1,000 in leaseholds for 99 years (as distinguished from investing in freeholds), and at the same time invest, and allow to accumulate at compound interest, the amount saved in purchasing leaseholds as distinguished from freeholds, then at the end of the 99 years he would have, not an old house but, accrued at compound interest, three times the original cost of the house. It was only improvident lessees who, having taken a larger interest and put nothing by for renewal, very improperly (as he thought) complained that at the expiration of the lease they lost all source of income.

Mr. JAMES GRAY (Visitor) said that, owing to the great attention he had paid to this question for the last three years, the discussion was most deeply interesting to him. The subject had now been before a Select Committee of the House of Commons for three years, and had been thoroughly investigated by them. His connection with certain interests in London before that Select Committee disabled him from speaking as freely as he would otherwise have wished to speak. But reference had been made to one authority, who was a great authority still—and one, he thought, hardly sufficiently consulted by those who were students of such

questions as that under discussion. He referred to JOHN STUART MILL, whom Mr. TORR had quoted as being in favour of the taxation of ground-rents. There was one passage in his "Political Economy" which he would like to read, and which might indicate JOHN STUART MILL's opinion upon such a proposal as that of taxing existing ground-rents, which formed one class of realised income. It had been quoted before the Select Committee by a gentleman who had read an able Paper before the Institution about two years ago—Mr. WILLIAM MATHEWS, of Birmingham. The suggestion had been made to Mr. MATHEWS, while giving evidence before the Select Committee, by one of its Members, that the term "confiscation" as applied to the taxing of ground-rents was an improper expression, and Mr. MATHEWS added a note to his evidence, after he had given it, in these words:—"It was suggested 'to me that I used too strong a term in designating 'as an act of 'confiscation' the imposition of a new tax 'upon ground-rents. I wish to justify the expression by 'reference to an author who is still regarded as an 'authority of some weight upon economic subjects. In 'book 5, chapter 2, section 3, of the 'Principles of Political Economy,' (volume 3, page 356 of the second edition), 'JOHN STUART MILL uses the following language respecting 'the proposition of an exclusive tax on what is called realised 'property. The language applies with equal justice to a 'proposition to put a special tax on a certain class of 'property, such as ground-rents.'" These are the words of JOHN STUART MILL:—"Except the proposal of applying a 'sponge to the national debt, no such palpable violation 'of common honesty has found sufficient support in this 'country during the present generation to be regarded 'as within the domain of discussion. The burthen thus 'thrown on the owners of the smaller portion of the wealth 'of the community, would not even be a burthen on

“ that class of persons in perpetual succession, but would
 “ fall exclusively upon those who happened to compose it
 “ when the tax was laid on.” (That is to say, the present
 owners of ground-rents would be the only sufferers.) “ As
 “ land and those particular securities would yield a smaller
 “ net income, relatively to the general interest of capital and
 “ to the profits of trade, the balance would rectify itself by
 “ a permanent depreciation of those kinds of property.
 “ Future buyers would acquire land and securities at
 “ a reduction of price, equivalent to the peculiar tax,
 “ which tax they would therefore escape from paying;
 “ while the original possessors would remain burthened
 “ with it even after parting with the property, since they
 “ would have sold their land or securities at a loss of value
 “ equivalent to the fee-simple of the tax. Its imposition
 “ would thus be tantamount to the confiscation for public
 “ uses of a percentage of their property, equal to the per-
 “ centage laid on their income by the tax. That such a
 “ proposition should find any favour is a striking instance of
 “ the want of conscience in matters of taxation, resulting
 “ from the absence of any fixed principles in the public
 “ mind, and of any indication of a sense of justice on the
 “ subject in the general conduct of governments. Should
 “ the scheme ever enlist a large party in its support, the fact
 “ would indicate a laxity of pecuniary integrity in national
 “ affairs, scarcely inferior to American repudiation.” He
 left Mr. TORR to JOHN STUART MILL, but thought that he
 could hardly quote him as an advocate of the taxation of
 existing ground-rents while the passage above quoted
 remained in his “ Political Economy.”

On the motion of Mr. SPENCER CHADWICK, the discussion
 was then adjourned to the next Meeting.

AT
THE ORDINARY GENERAL MEETING,
Held on Monday, April 29th, 1889.

MR. ELIAS PITTS SQUAREY (PRESIDENT) IN THE CHAIR.

The adjourned discussion on the Paper on "The Rating of Ground-Rents," read by Mr. G. BEKEN (Fellow) at the Ordinary General Meeting, held on Monday, April 1st, was resumed by

MR. SPENCER CHADWICK (Fellow), who said there were one or two points in Mr. BEKEN's very excellent Paper to which he would ask attention. In giving an example of the rating of ground-rents Mr. BEKEN stated, on page 362, that, if a special rate were to be levied on ground-rents, the ground-rent on a leasehold house would be rated twice over. It would of course be so if the rating were to be upon the ground-rent and then upon the rack-rent in addition. But in the first paragraph of page 364 of his Paper the matter was put in another way. It was there said, "The occupying tenant, who now pays rates, would be able to deduct a portion of such rates from his land-lord." If that were so the ground-rent would not, he maintained, be rated twice over.

In another part of the Paper an elaborate calculation was inserted to show how, if ground-rents were rated, certain facts should be taken into account in order to apportion the amount payable fairly as between lessor and lessee, so that the landlord might not pay too much towards the improvement in value caused by the expenditure of the rates. In

taking this view he feared the author of the Paper had rather reckoned upon there being a more equitable spirit among the promoters of the scheme than, as he (Mr. CHADWICK) believed, they deserved credit for.

Everyone familiar with the question must admit that it was much easier to talk about taxing ground-rents than to carry out such a suggestion. At all events, nothing like a working proposal had been made. He had given some thought to the question, and had come to the conclusion—without for the moment considering whether it was right and just to rate ground-rents—that it was not possible to prepare a working scheme, owing principally to the fact that the proportion of ground-rent to the rack-rent varied so much; the two amounts really bearing no relation to each other. If it had been the case that the ground-rent always represented a certain fixed percentage of the rack-rental value, it would then have been easy enough to prepare a working scheme for rating the same, and the only question then left to consider would be, is it fair to rate ground-rents?

He had often thought that, had no scheme been put forward for leasehold enfranchisement, nothing would have been heard about rating ground-rents, but it appeared as though the promoters of that scheme had looked about them for some means whereby to depreciate the freeholder's interest, that they might, when they got the power, purchase the freehold at a low price, and had therefore jumped at the idea of knocking off 25 per cent. of the freeholder's income by rating the head-rent, without first considering whether such an idea could be worked out or not.

A very few examples, among many which might be given, would prove that the scheme would not work.

Take two City ground-rents, one of £500 and one of £1,000 on exactly similar sites, half the ground-rent in one case having been commuted by a premium. If ground-rents

were rated, one freeholder would be paying twice as much as the other, on property of the same value.

Again, take two building sites, value £1,000 a year each, one leased at that rent and the other in hand, and assume that the Bill for rating ground-rents became an Act: the freeholder in the case where the lease had been granted would suddenly find £250 per annum of his income confiscated and put into the pocket of his tenant, and in the case where the lease had not been granted the letting value of the land would suddenly jump from £1,000 to £1,250, because of the burden put upon the freehold interest and taken off the lessee.

It was said in support of rating ground-rents that it was right the freeholder should pay his share of the rates, because the money, or some part of it, was spent in improving the values of the property; but experience told him that this was not the case as a rule, although no doubt there were a few exceptions. Would it not therefore be fairer to try to find some way to meet the exceptions than to inflict an injustice in thousands of cases to meet an exceptional one?

It was perfectly clear that during the term of the lease the freeholder would obtain no advantage by such improvements, and, in cases of long leases, the life would run out first, and the whole of the improved value would be enjoyed by the lessee, although part of the cost of producing it had (if rated) been paid by the freeholder, in respect of which he, personally, would receive no advantage, although his successors might. But by reducing this to figures it would be seen that the freeholder would pay much more than the value of the increment by sharing in the rates, particularly in the case of leases having 50 years or upwards to run. For instance, to take again a City lease at a ground-rent of £1,000 per annum and a rack-rental value of say, £2,000—

not at all an unusual case—by rating ground-rents the freeholder would pay £250 per annum out of his £1,000, which, if invested at 3 per cent. year by year, would represent £25,000 in 50 years, £50,000 in 70 years, and £100,000 in 90 years.

The professed object of the United Committee for the taxation of ground-rents and values was, “To make owners of all interests in land contribute a fair share to local taxation, which now falls on the sole interest of the occupier.” Lord HOBHOUSE was the President of this Committee—formed by the consolidation of the London Municipal Reform League and the Land Restoration League—and he explained the principles, and showed the means of their attainment, from his point of view, in an article in the *Contemporary Review* of July 1888, entitled “Local Taxation of Rents in London.”

But all the arguments used by Lord HOBHOUSE and others in favour of the scheme were, he thought, one-sided, and had failed to show that the land did not already bear its share of local taxation. As a matter of fact it did so, although indirectly, because if a lessee had not to pay the whole of the rates, but the freeholder paid part of them, the land would fetch just so much more in the market as the freeholder paid in rates for the lessee or occupier.

The scheme, it seemed to his mind, was altogether an exceedingly unjust one, for it practically amounted to a proposal to take by the throat a man who had chosen one particular form of investment for his money, and to shake out of him a portion of his income or earnings as the case might be, giving him no corresponding advantage whatever. He did not himself see the slightest chance of such a proposal ever passing into law.

Mr. G. R. CRICKMAY (Fellow) said the Paper prepared

by Mr. BEKEN was one well worthy of discussion and full consideration; but, though so carefully and cleverly prepared, and so ably supported from one point of view, it appeared to him there was another side to the question which should be fairly considered before arriving at the conclusion that no alteration was desirable.

He was not one of those who thought that all property in land was robbery, neither would he tax land at 20s. in the £, but he did think that property had its responsibilities and should bear its fair share of the common burthen.

It had been stated in the course of this discussion that "the taxation of ground-rents would not add one penny to the Imperial revenue, or contribute one iota to the local rates." He maintained that this was not so in fact, if both the lessor and lessee bore their fair proportion of taxation, seeing that the ground-rent was payable and was paid whether the house was let or not. A very large percentage of the existing houses were unoccupied, and consequently did not contribute to the rates, but as the ground-rent was paid in full it followed that if ground-rents were taxed the contribution to the local rates would be considerably more, and would be borne by the person receiving the profit. It had been said by Mr. BEKEN that if ground-rents were rated the landlord would take the earliest opportunity of raising them, but did he not now, in letting his land, secure the very best rent it was possible to obtain? What were the usual circumstances in connection with letting of land for building purposes, and who were the principals engaged in the matter? They were, first, the owner of the land; secondly, the impecunious builder, who thought that by entering into a speculation he might in some way make capital. To enable the builder to proceed, the ground-landlord consented to a system of improved ground-rents on which the builder was enabled to raise money for the pur-

pose of making roads and drains and paying other outgoings, and, as he hoped, make a profit for himself.

The speculation very frequently ended in the builder becoming bankrupt, and paying his creditors a very small sum indeed in the £. It could not therefore be said that the lessor and lessee started on equal terms; and this inequality accounted to a large extent for the easy manner in which covenants were accepted imposing the whole burden on the lessee.

As a matter of justice it did appear to him fair and reasonable that both parties should contribute to the rates, seeing that at the end of the term the whole property returned to the lessor, together with all improvements, even although the whole of the risk, responsibility, and outgoings had fallen upon the lessee.

As Mr. CHADWICK had stated, there would no doubt be great difficulty in arriving at a proper solution of the question, but he could not help thinking that if it were fairly faced by competent men, willing to consider the matter dispassionately and to do justice equally to all parties, some scheme might be thrashed out by which everyone concerned would fairly contribute to the improvement of the property in proportion to the benefit he derived from that improvement.

The ground-rent was, as he had said, payable whether a house were let or not. Now, was it fair that a man who ran the whole risk and had the entire responsibility of the undertaking, whether the house let or not, should pay the whole of the rates, and that the man who received his ground-rent—a very large portion of the rack-rent—whether the house were let or not, should escape that risk? He could not think that such a state of things was equitable or just.

Mr. S. WALKER (Fellow) said he should like to ask to what purpose a tax on ground-rents would be applied if imposed ; whether for imperial purposes or for local and municipal improvements. If the former, it appeared to him that ground-rents should not be taxed unless dividends derived from consols, shares in railways and public companies, and all other income derived from investments were taxed alike. If for municipal purposes, the tax would then be in relief of the present taxes now levied upon property, and the effect would be to shift the burden from existing leaseholders to the ground-landlords. But as the lessee took the land knowing what burdens there would be upon the property when erected, and agreed to pay ground-rent accordingly, it would be manifestly unjust to take the tax off the lessee which he was under covenant to pay and impose it upon the ground-landlord. The effect of such an arrangement would, he thought, be most disastrous to the present owners of ground-rents, and would, it appeared to him, be nothing short of confiscation. The loss would be to the present owners, as, in the event of their wishing to sell, a portion of their interest would be practically annihilated.

Take, for instance, a ground-rent of £100 per annum, secured with a fair margin, which would be worth in the market at least 25 years' purchase, or, say, £2,500. If a proportion of the taxes which at present amounted to, say, five shillings in the £ were put upon the ground-rent, that would be equal to a charge of £25 per annum, and the net amount of the ground-rent receivable, instead of being £100 per annum, would be £75. This ground-rent of £75, if taken upon the same table, at 25 years' purchase, would only be worth £1,875, thus showing an immediate loss to the owner of £625. But this would not be all the loss ; a ground-rent subject to varying deductions would not realise so much in the market as would a net ground-

rent without deductions, as there would be increased trouble in connection with the assessment and paying of taxes.

That was how the matter would work out if the Act were made retrospective; but if prospective, the question arose whether a lessee would give any more for the land. He (Mr. WALKER) very much doubted it.

A tax on the value of the land would also be fraught with difficulties and loss to the ground-landlord, as the tax might increase in consequence of the increase in the value of the property and of additional buildings which the lessee might put upon the land, whereas the ground-rent would be fixed, and might be entirely eaten up by the additional imposts.

If the proposed tax were put upon ground-values instead of ground-rents, then it would become a second land-tax, and, to carry out the principle logically, should be chargeable on all land and houses, on the freehold of railways, gas and water works, and all manufacturing premises; but it would be most unjust to impose such a tax unless other classes of security, such as consols and dividends of public companies, were dealt with similarly, for ground-rents were already paying property-tax, like other investments.

Another question arose as to the varying amounts of ground-rents on similar houses. Take three houses in one street, held at ground-rents of £50, £25, and £1 per annum respectively. If a tax on ground-values were imposed it would be almost impossible for the assessment committee to fix the tax, and it would frequently happen that a ground-landlord would be called upon to pay more in the shape of taxes than he received as rent. Mr. TORR had stated that Mr. GLADSTONE was surprised when he saw the Thames Embankment to find that it had been made by the rate-payers of London, while the ground-landlords had contributed nothing, as he alleged, towards it; but that was hardly

accurate. The lessees and occupiers of property immediately in the neighbourhood of the Strand received a direct benefit from the Thames Embankment, and all London an indirect benefit, by better facilities for locomotion, while the improvement to the ground-landlord, who had let his land for perhaps 99 years, was very remote. The work was paid for by means of a loan spread over a large number of years, and it must not be forgotten that the ground-rent, being part of the value of the house, was already assessed. It could not possibly concern the Legislature whether a rate was paid wholly by the lessee or partly by the lessor and partly by the lessee. In discussing this matter with laymen he had heard it suggested that the owner of ground-rents, when he came into the reversion, should pay a certain proportion of the capitalised rack-rental value to the State, for he came into it, it was alleged, without any effort of his own. But the owners and their predecessors in title had had the self-denial to wait many years for that improvement, meanwhile receiving only a very small percentage for their investment.

It seemed to him (Mr. WALKER) that the suggested tax was suspiciously like a device for mulcting certain rich ground-landlords at the West End, in forgetfulness of the fact that many trustees, widows, and children had all their capital invested in the same security, and that these, as well as many insurance companies, would be much more prejudicially affected by the impost than would the owners of large estates.

Mr. T. CHATFIELD CLARKE (Fellow) said he had listened with great interest to Mr. WALKER's speech; but he thought all must admit that the Legislature could not always act for and make laws in favour of exceptional cases, but must proceed on much wider lines. This proposal to tax ground-rents appeared to be no new one. He held in his

hand the Metropolis Rating Amendment Bill, now before Parliament, and by which it appeared that a Select Committee on Metropolitan Local Government, in 1866, reported that nearly the whole of the late Metropolitan Board of Works expenditure and obligations had been incurred for the purpose of supplying wants arising from the defects of the former administration of the affairs of the Metropolis, and of effecting permanent improvements which have tended to increase the value of property in the Metropolis.

Then it concluded, "Your Committee therefore recommend that in any arrangement of the fundamental resources of the Metropolitan Board, a portion of the charge for permanent improvements and works shall be borne by the owners of property within the Metropolis, the rate being, in the first instance, paid by the occupier, and subsequently deducted from his rent, as is now provided in regard to the general property tax."

This he cited to show that this question had not now arisen for the first time, nor should it, he thought, be looked upon by them except from an economic and social standpoint. The Institution had nothing to do with political issues, such being entirely outside the consideration of a professional body. His own feeling with regard to this question (and he had been constantly asked to connect himself with societies for the rating of ground-rents) was that no practical scheme had yet been put forward. And yet he felt, with Mr. CRICKMAY, that a grievance existed.

Such being the open state of his own mind, he had not been able to give his assent to any particular society or scheme, and yet he felt, from the few facts that he would put before the Meeting, that surveyors ought to consider the proposal a little more attentively than had been deemed necessary by some of those gentlemen who had already

spoken. He would offer one word of caution. He thought that Members of the Institution, in their capacity as surveyors, had not only to represent the interests of lessors, but also those of the lessees, and he regretted that the author of this clever and excellent Paper did not appear to him to appreciate at all the greatly-increased burdens which, of late years, lessees of property had had to bear. He did not wish to do Mr. BEKEN the slightest injustice, but he failed to catch, throughout the whole Paper, a single sentence which seemed to him to be sympathetic with the woes and griefs of lessees during these last few bad years.

Good as the Paper was, in many respects it was very largely composed of somewhat self-evident arguments, all very cleverly leading up to prearranged conclusions.

He had ventured, with the view of elucidating some facts bearing on this matter, and feeling it desirable in these discussions to be as practical as possible, to put a question or two to Mr. CHARLES HARRISON, who had given a great deal of consideration to this subject. He understood Mr. BEKEN to admit the principle that the landlord or lessor should bear a proportion of the charges for permanent improvements. But what was the real fact, as stated by Mr. HARRISON, whose judgment and whose figures he had no reason to doubt? He said it might be reckoned that the amount contributed by occupiers on account of permanent improvements in London was about £800,000 per annum; that sum representing the repayment of capital on the following accounts, viz.:—Main drainage, street improvements, freehold sites for schools, freeing bridges, workhouses, baths, and other permanent improvements. This was a very serious statement. According to the calculation of Mr. BEKEN (gathered, he believed, from the Metropolitan Board of Works) that a penny in the £ produced £125,000 in the year, such a sum represented a rate of nearly $6\frac{1}{2}d.$ in the £.

This was no light charge to throw on the lessee for permanent improvements which went largely to benefit the lessor's property in the future.

He could not quite follow Mr. WALKER, for he (Mr. CHATFIELD CLARKE) held the formation of the Thames Embankment to be an enormous improvement to the property of those who had frontages along it. The improvement affected a good deal of land that was not already let, but which was yet to be developed by the formation of the embankment. There the landowner or lessor reaped a direct benefit, but at the present moment went scot-free from any considerable part of the charge. The author of the Paper was also, he thought, slightly inaccurate in his statement of ancient history. He believed he went back to the year 1290, or some other date in the thirteenth century; but as a matter of fact there was a statute of Henry VIII. which enacted that the sewer-rate should fall on the freeholder. This was a direct enunciation, at a very early date, of the principle that the sewer-rate was one of those which should fall on the freeholder.

Now, the question, looked at from an equitable point of view, presented itself to his mind thus:—The number of rates had been added to considerably, and must, during the progress of society, be still further added to. Society must pay for improvements and for the welfare of the general masses of the people. Many said:—"There exists a contract, and the sanctity of contract must be jealously preserved. The lessee undertook to pay not only the rates payable at the time he took the lease, but any new ones subsequently to be levied." That was true, but he would ask, taken as a specimen only, whether any man who took a lease many years ago ever foresaw a School Board rate of 8*d.* in the £, or anything of the same sort. It was necessary, therefore, to take an equitable view and see whether the necessities of

society had not imposed on the lessee a burden too heavy for him to be called upon, fairly, to bear, and whether he might not, therefore, claim some equitable relief, the form of which was yet to be considered.

He wanted, in a few words, to put the matter as it appeared to him ; not with any settled scheme in his mind, but with the feeling that the lessee had a reasonable claim—that he had borne, and was bearing, a very heavy burden, and that this was a conclusion at which many had arrived after deep study of the subject. He had had, quite recently, several representations made to him that something should be done to try and relieve tenants of the enormous ground-rents they were paying, and he thought the experience of many Members of the Institution would be that the lessees of many large City properties had, during the last few years, borne a very heavy increase in charges with very inadequate compensating advantages.

It had been recently stated that from the consolidated rate for improvements in the City the Commissioners of Sewers had spent (he was speaking subject to correction) four millions in permanent improvements in the City of London, raised by a consolidated rate on the taxpayers of the City. This large expenditure wore a very serious aspect when it was considered how many hundreds of empty offices and warehouses there were at the present time.

He agreed with Mr. CRICKMAY, without committing himself to any scheme, that some consulting body was wanted. Still, he would say that surveyors, if they were willing to take a perfectly equitable view and to hold the scales evenly between lessor and lessee, must arrive at the conclusion that the lessee had now an equitable claim for consideration, and it was for Members of this Institution to devise a practical way in which that could be effected.

Mr. HOWARD MARTIN (Fellow) thought that the Act of Henry VIII., referred to by Mr. CHATFEILD CLARKE, was not a case in point, as it applied not to a rate for sewers in the present sense of the term, but for the arterial drains of land—probably reclaimed marsh land—let on agricultural tenancies, and not held on leases at all. The term was still used in the Fens in that sense, where such drains and the sea walls were maintained by a similar arrangement.

He could not agree with Mr. CHATFEILD CLARKE in thinking that $6\frac{1}{2}d.$ in the £ was a very large proportion to be paid in respect of permanent improvement by the long-leaseholders, who had the whole benefit during their terms of the increased value of their holdings connected with those permanent improvements. The actual cost of the improvements was doubtless large; but the liability to pay it was amply covered by the advantages the lessee obtained by the original bargain.

Nor, again, could he agree with Mr. CHATFEILD CLARKE that the opening up of private property for building purposes was often directly the result of the ratepayers' expenditure; in the great majority of cases the new roads and sewers necessary for laying out new land for building were constructed at the expense of the landowners themselves.

And yet again he could not agree that Mr. BEKEN's arguments and illustrations should be criticised, because they were familiar to many of his audience. His arguments might be well known to surveyors who were already practically acquainted with the details of the subject, but the report of the discussion which took place at the last Meeting showed how necessary it was to reiterate the simple arguments and plain statements of fact on which the decision of the question ought to depend.

It seemed to him that one of the very strongest points of Mr. BEKEN's Paper was that it was based entirely on fact

and not on feeling. As a general rule the discussion of this subject was approached from the point of view of strong feeling; and then it was sought to make the facts fit the feelings which had been already excited.

There was a very notable example of that mode of discussion well known to many present. A Royal Commission sat some time ago, to consider the condition of the tenements occupied by the poor; some of its members had previously a strong feeling against the leasehold system, and expressed an opinion in their report that the bad condition of the tenements of the poor (which everybody would admit was still bad and was then worse) was, to a large extent, caused by the leasehold system. They were injudicious enough, however, to give the examples which had led them to this conclusion, and, on investigation, it turned out that many of those very houses were actually *freeholds*.

That was a fair example of the spirit in which this matter had been discussed by the opponents of the leasehold system, and it seemed impossible, therefore, to reiterate too often the every-day arguments, which brought the matter down to the level of common sense and business experience.

It appeared to him that Mr. TORR's speech was a very fair example of the bane to which Mr. BEKEN's mode of treating the subject should be the antidote. The speech was very eloquent, no doubt, but it was entirely based on the assumption that the leasehold system was in itself wrong and unjust, and that therefore anything that could be done should be done to deprive ground-landlords of their oppressive advantages. Stripped of its rhetoric this was what Mr. TORR's argument practically amounted to, and that surely was not the spirit in which such a question should be considered.

That gentleman appeared to have failed to appreciate his opponent's arguments when he said it had been stated that

taxing ground-rents would benefit ground-landlords, and asked in triumphant scorn, "Why, then, do they object?" It had never been so stated; it was said that if the leaseholder were relieved of part of his present liability for taxes in *future* contracts the rents would be increased in proportion, but Mr. BEKEN had shown conclusively that to subject existing ground-rents to taxation would directly reduce their value by 25 per cent., and indirectly far more by making them a less desirable investment.

Again, Mr. TORR had spoken of ground-rents being "artificial," and of the "shams and pretences" of the leasehold system. All our arrangements were more or less artificial; the Members of this Institution did not come down to its discussions in a state of nature; there was no divinely-appointed law of nature to regulate the rate of ground-rents any more than the premiums on life policies; both were artificial, but **not** necessarily unfair on that account.

Then Mr. TORR appeared entirely to ignore the evidence that had been collected on this question during the last three Sessions of Parliament. During the whole of the Session of 1887 a Parliamentary Committee was taking evidence as to the operation of the leasehold system in London, which was published, at the end of the Session, in a Blue Book of 812 closely-printed pages, and it could be said, without fear of contradiction, that although the opponents of the leasehold system actually advertised for leaseholders' grievances, and did all that could be done to get evidence against it, not one case of injustice to a leaseholder was substantiated; and of those that were alleged nearly all were proved to be absolutely without foundation. Nothing was more clearly established by that mass of evidence than that the leases which Mr. TORR spoke of in such terms as the "grinding of the tenant by the ground-landlord" were the result of arrangements based on equitable principles, which were perfectly well understood

by both parties, mutually beneficial to lessor and lessee, and as much a matter of business calculation as the purchase of a deferred annuity or the payment of the premium on a policy of life insurance.

What encouragement was there for the rational investigation of such a subject if, after three Sessions spent by a Parliamentary Committee in getting together evidence upon the working of the leasehold system, that evidence was to be entirely ignored in the discussion of questions connected with it?

The question of taxing values, as it was called, was only incidentally referred to in the Paper, but it appeared, in the report of the discussion that followed, that a Fellow of the Institution had expressed an opinion in favour of such taxation. He hoped he should not be out of order in saying a few words against that view, for it appeared to him that taxing values would be a far greater injustice than taxing ground-rents. What was meant by taxing values? He supposed it must mean taxing property from which the owner at present got no return.

Now, the principle of all of our assessment for taxation was, that taxes should be paid in proportion to the annual benefit deriveable from the property. But, on what principle could it be contended that an owner should be taxed upon what he had *not* got, and how was such an assessment to be calculated? He supposed the proposal to tax values was really a proposal to tax reversions, and to tax uncovered building land. As regards reversions he would take, as an example, a case he knew, in which a gentleman owned a ground-rent of £5 a year, with a reversion at the end of 30 years to a house worth £500 a year, which he would enjoy for 15 years, when it would revert to the ground-landlord, who had meanwhile a ground-rent of a shilling a year for it. What was to be taxed as the value? Was that un-

fortunate man, who had £5 a year at present, to be taxed on the basis of the £500 he was going to have 30 years hence? Or was the ground-landlord who had a shilling a year, but in 45 years' time would have the full rack-rental value, to be thus taxed? If so, owning ground-rents would become a misfortune which they should avoid, and from which they should carefully protect their children. The ground-rent owner was not to be taxed for what he had actually got, but for what he expected to have in 30 or 40 years' time. Unless the proposal to tax values as applied to ground-rents or reversions meant this, it appeared to have no meaning at all.

The other kind of value proposed to be taxed appeared to be that of bare building land. Many of the Members present had had experience in dealing with building land, and most of those who had "cut up" building estates in the suburbs of London and similar districts knew well that many plots were bought by local tradesmen and persons of small means, who did their best to get a customer for their plots, but often had to wait years before they could do so. They bought these plots as a kind of savings bank for their money; the land cost them nothing while it lay idle, and as soon as they got anyone to cover the land they got the ground-rent (which was an excellent provision for their families), or a small profit on their purchase-money. Was it contended that a man who put by a few hundred pounds in this way was to pay annually taxes on what he hoped to get, and was doing his best to get, but did not yet actually receive? Was he to be thus fined for being thrifty? Surely, such a monstrous injustice would never be committed.

Then, again, there was the case of the land which formed a fringe round every large town. Such land was usually potential building land—that is, it would be building land if you could get anybody to take it—and no doubt

the time would come when it would become actually building land. In the meanwhile there was no market for it for building purposes because the population had not yet extended far enough to need it, and it could only be sold or let for agricultural or accommodation purposes. Was it actually proposed that an unfortunate man with 25 or 30 acres of such land (perhaps inherited from his father or grandfather, and his only property), let probably at a rent of £5 an acre per annum or less, was to pay taxes on what would be its annual value as building land if he could get it? If so, the owner might be ruined by his property. Such an owner might be getting £5 an acre rent on the outskirts of a town like Croydon for 50 acres which, whenever the demand for it arose, might be sold for £500 an acre or more for building land, and meanwhile could not be sold for more than £150 per acre. If that land were to be assessed at its building value, the owner would probably have to pay on an assessment of £25 per acre per annum, and his rates and taxes would be actually more than he would be receiving from his property.

Could it be pretended that, because a man's land might be building land some day, its ownership was to be made a loss instead of a profit to him meanwhile? It seemed to him that, before people committed themselves to advocating this or that proposal for taxation, they should carefully work out the operation of the proposals they advocated. They should take a few actual instances, and endeavour to put themselves in the place of those who would have to pay the proposed taxes; and then he thought the proposal to tax values would not be much heard of. What was the advantage which it was alleged would be gained by such a piece of cruel injustice? According to its supporters, principally that it would be the means of forcing building land into the market. But many promising neighbourhoods had been

ruined already by building land being forced into the market prematurely. All round London there were miles of new roads laid out for building, with uncovered frontages and unoccupied houses in all stages of completion, representing bankruptcy to builders and loss to mortgagees and landowners and all concerned, caused by the endeavour to force building land into the market in excess of the demand. No other inducement than the self-interest of the owners was needed (with very rare exceptions) to bring their land into the market as soon as the demand for it for building purposes really required it. What was really required was free trade in land, not legislative restraints on dealings in it, and if Parliament would be kind enough to let surveyors and landowners on the one hand, and builders and occupiers on the other, alone, they would be able to conduct their business in the future, to their mutual advantage, as in the past. If, however, legislation increased the difficulty or risks or expense of such dealings, its interference could only lead, by checking the supply of houses and therefore raising the rents, to very considerable loss, not only to landowners and surveyors, but also to occupiers themselves.

In conclusion, it seemed to him that the Members were much indebted to Mr. BEKEN for his Paper. It was an excellent one, and specially so from the fact that it carefully avoided flights of eloquence, and dealt, in a most business-like manner, with the actual figures and facts. It seemed to prove conclusively that no one suffered at all from the present arrangement, which threw the mere disbursement of rates and taxes on occupiers of houses.

Mr. DANIEL WATNEY (Fellow) said he entirely agreed with Mr. CHATFIELD CLARKE that no practical scheme had yet been put forward that any reasonable man could adopt. He had come to the meeting prepared to learn, and with the

full belief that he should know before he left the room what the scheme really was, what was in it, what the arguments were in its favour, what the reasons for its adoption, and how it was proposed to be carried out. He must confess that he was intensely disappointed when he heard Mr. CHATFIELD CLARKE say that there was no practical scheme yet suggested by the promoters of the agitation. He had not studied the report so carefully as the last speaker, but he had taken a great deal of pains to try to find out what was the object of these proposals, and he had only been able to come to the conclusion that it was the thin end of the wedge which, when driven home, would make the landlords of houses liable for the payment of the whole of the rates and taxes. If the owner of the ground-rent was made liable to pay a portion of the taxes, before very long he would be called on to pay the whole.

There was one point which he would ask the speakers who followed him to inform him upon. It had been stated by Mr. CHATFIELD CLARKE, and on the last occasion by Mr. TORR—from whom he certainly expected better arguments—that the owner of ground-rents ought to pay rates on permanent improvements. Now, most of the money expended on improvements had been borrowed for, say, 50 years at the longest, and at the end of that time the loan was paid off. Was the ground-landlord, or owner of the ground-rent, to cease paying when the loan was paid off? If it were 6*d.* in the £, and the landlord was to pay half for 50 years, upon what assessment would this be calculated, and was he to cease his payments at the end of the 50 years? Again, supposing a case where a portion of the money was borrowed, and there were two leases, one having 30 years to run, and another, on a house in the same terrace, or close by, having 60 years to run. Was the man who had granted the 60 years' lease, because he could not obtain his property for

60 years, to pay less than the man who had only 30 years to wait? How was it all to be worked out? If it was to be done fairly, it was clear that the man who had only to wait 30 years before getting the full rack-rental should pay more than the man whose prospect of enjoyment was so many years more remote.

Some few years ago a property in the City was let on building lease at £3,500 a year. An improved ground-rent was created of £1,500, *i.e.*, it was under-let at £5,000. He supposed the rack-rental was now about £9,000. Now, if ground-rents were ever taxed, the tenant of that improved ground-rent of £1,500 a year ought certainly to pay a portion.

Mr. T. CHATFEILD CLARKE: That would be a terminable annuity.

Mr. D. WATNEY, continuing, said the man who bought the ground-rent of £1,500 would receive the improved rental without any effort at all on his own part. Surely if the owner of the ground, the man who received the freehold ground-rent, was to be taxed, the man who received the improved rent should also pay something. If so, he ought not to pay so much as the man who got £3,500, because, as his friend Mr. CHATFEILD CLARKE remarked, it was a terminable annuity. How were all these things to be calculated?

He thought the Institution was indebted to Mr. BEKEN for having introduced this question by his interesting Paper, and he much hoped, before the evening was over, to hear some valid and cogent reasons for such a scheme of taxation.

Mr. E. J. HARPER (Professional Associate) said he should not have ventured to follow gentlemen of such lengthy experience as the previous speakers were it not that he

occupied a position in which he was compelled to give a considerable amount of attention to this question.

The Institution, he thought, could hardly altogether ignore what was passing outside, although the Members, in their professional capacity, should hold themselves entirely aloof from political questions; but the fact could not be overlooked that a large majority of the Members of the County Council for the Metropolis had been elected on their undertaking, in some vague or indirect manner, to go in for the taxation of ground-rents, and it seemed to him that professional men would hardly be taking the correct course if they merely said that the taxation of ground-rents was unjust, and left it there; even after having proved most conclusively that it was unjust. There was, he thought, a notion abroad that land was not properly taxed. He did not mean by that, that it did not bear any taxes, but that it was not taxed in a proper manner, and the cry for the taxation of ground-rents was the outgrowth of this feeling, the popular mind being utterly ignorant of the technicalities involved in the proposals. The view of the would-be reformers was, "Ground-rents represent the annual value of the land, and we want the land to bear its share of the burdens of taxation; therefore we will tax ground-rents." There was some substratum of truth in that, and if the ground-rent bore any relation to the value of the land the argument might have some weight, but a ground-rent as fixed in a lease was an arbitrary thing, and to tax it would be utterly unjust.

A few years ago, in St. Giles'-in-the-Fields, there was a slum—a thoroughfare, but to all intents and purposes a slum—called Dudley Street, inhabited by the lowest class of shopkeepers and tenants. The Metropolitan Board of Works converted that slum into a portion of one of the principal thoroughfares of London, viz., Shaftesbury Avenue.

Both sides of the slum were on the Hammond-Spencer Estate. The side taken by the Board was acquired at an enormous cost—no doubt a fair price under the Lands Clauses Act; but it ran, he thought, into five figures—for compensation and loss throughout the whole estate. But the increased value on the other side of the street (which they retained) was so great that the rack-rents of the old premises would not be equal to the annual value of the ground alone. This was an extreme case, but there were many such extreme cases, and it seemed that the popular mind was not satisfied that such a state of things should go on without the freeholder, who reaped such an enormous benefit in those exceptional cases, being made to pay something; and it rested, he thought, with surveyors, in their profession, to show that those cases could be properly and fairly dealt with, and in such a way that those people who benefited so vastly by the improvements carried out at the public expense should contribute largely towards the cost.

A remark made by Mr. WALKER, if correct, seemed to him to be an unanswerable reply to the argument that ground-rents or ground-values should be taxed. He said there were two parties to the bargain—the lessor and the lessee—and they had entered into a compact that the lessee should bear all the burdens in the shape of any taxes or imposts on the property whatever they might be, and it would be manifestly unfair to go behind that. This would be perfectly true were it not for the important fact that the lessee *must* accept those terms or go without the opportunity of building. Wherever a builder went, or to whatever freeholder he applied for land on lease, he would have the same terms, and consequently must accept them. Parliament had already gone behind the contract between lessor and lessee in the levying of property-tax, and it seemed to him that if any fresh assessment was to be made on land it must be made in some such

manner as property was assessed on now and the tax be actually disbursed by the occupier, who would deduct it from his rent in the same way that property-tax was deducted.

No doubt land bore a large proportion of the local taxation, and the question presented itself, "Is that taxation levied in the best possible manner?" It was levied on the occupiers of houses. Through them it found its way back to the lessee, and ultimately to the lessor. But what was the effect of this system? It made people look to their balance-sheet pretty closely before they would take a better house, and people living in lodgings were very careful how they launched out and took a house for themselves; for in addition to the rent which they would have to pay there would be all the rates and taxes, whereas, if they knew that the rates and taxes would be levied on the value of the ground and not on the value of the house, there would be a freedom, so to speak, in competing for houses that would render a great service to the building trade, which was now certainly not in the best possible condition.

If, again, vacant land were taxed (though of course it would be unfair to tax it on a profit that could not be realised) there was no doubt that the taxation of vacant land, which was now held for the purpose of realising a greater profit in the future, would bring that land into the market and enable builders to work more cheaply.

This question must be faced, and it behoved Members of the Institution to look into it a little further, and, if the taxation of ground-rents was unfair, to endeavour to arrive at some means by which land could be made to bear a more direct share in the burden of local taxation than was now the case.

Mr. H. C. NEWMARCH (Fellow) said he did not follow the last speaker's argument. As it seemed to him, his view

was that if an owner kept land he did so at the expense of the ratepaying public, and that if he forced land into the market at a cheap rate he was conferring a benefit upon the community. He could not follow that argument, for if land were held until it was worth more, then, when it was put into the market at a greater rateable value, a greater amount of rates was produced.

It seemed to him that this question must be divided into two parts. There were two sorts of ground-rents to be dealt with—the existing ground-rents and those yet to be created. He thought everyone approached the subject of rating existing ground-rents with great caution, and rightly so. What did it mean? It meant upsetting existing contracts and a breach of faith with the lessor, and he had yet to learn that a lessor was less entitled to consideration under a contract than a lessee. If the principle were once admitted that one party or the other might upset a contract on account of circumstances of which he was not fully cognisant at the time he entered into it, then he thought a very great number of contracts would have to be upset. Was not it the fact that, if once it were possible and legal to upset a contract between a lessor and lessee, it would be as fair to upset that document which conveyed land from one man to another? What was the difference?

Then, with regard to future contracts creating ground-rents. He had considered the matter very carefully, and he failed to see one pin of difference whether a rate were payable by the landlord or the tenant. It came to exactly the same thing, unless it were proposed to double rate ground-rents. If this were not suggested then it seemed to him evident that the question of contract between landlord and tenant, or lessor and lessee, had nothing whatever to do with the

amount of rates to be borne by any property. What difference could there be?

It had been explained in that Hall time after time that when a man entered into a contract, and land was granted to him, it meant a smaller ground-rent if granted with all impositions upon it, or a larger rent without such impositions. That was the point—rate the one or rate the other. It came to much the same thing. But, to his mind, the importance of the question lay in the proposal to upset existing contracts. If this were to be done, then, as he said, there were many other forms of contract which might with equal justice be upset. If future contracts only were to be dealt with, and the burden were merely moved from off the shoulder of the lessee on to the shoulder of the lessor, the rent paid would necessarily be higher, but the rates would remain the same, and would be paid in a different manner certainly, but in reality by exactly the same persons as under the existing arrangement.

Mr. C. JOHN MANN (Fellow) said that it occurred to him that the taxation of ground-rents was proposed in order to remedy the suggested evils of the past rather than to secure any benefit that was likely to accrue in the future; for, as had been said, the taxation of ground-rents would fall on the leaseholder, and the position would be very much the same in the future as in the past. Occasionally, through depreciation in value of property and other local and special causes, the burden had fallen rather severely on the leaseholder to maintain property and to pay the heavy ground-rent which had been agreed upon; but it did not, he thought, follow that those large ground-rents would always be demanded in the future, bearing in mind that freedom of contract which would always, he hoped, be preserved between lessor and lessee.

Mr. BEKEN, in reply, said the question of levying a special improvement rate upon owners (not merely upon ground-landlords) by the Metropolitan Board of Works, referred to by Mr. CHATFIELD CLARKE, arose at a time when the repayments of the Board's loans were becoming burdensome through being made with undue rapidity; but in 1869 an Act was passed enabling the repayments to be spread over sixty years, when an improvement rate was felt to be no longer called for.

The principles set forth in his Paper, pages 367 to 377, met this question, and those principles had not been shaken by this discussion.

Surely, those gentlemen who had, for instance, referred to the Victoria Embankment had not realised that a *single payment* of fifteenpence in the £, even on the reduced assessment of that time, would have defrayed the *whole cost*, and yet that cost had not been all paid off yet!

The bulk of the improvement works carried out within the last forty years had been exceptional. No necessity would be found for a prolonged continuation of such works on so vast a scale, and hence the rates for such purposes ought to decrease.

A reference had been made to what is often called the "unearned increment"; for instance, on page 389, "Meanwhile, the landlord sat still and did nothing." He (Mr. BEKEN) was of opinion that there was nothing which could be fairly described as unearned increment. Whilst the owner bears any decrease in value, he is entitled to any increase.

It was often erroneously assumed that land is constantly increasing in value; also, that improvements always benefit adjacent property.

Amongst innumerable instances to the contrary which must be known to gentlemen present, it might be mentioned

that rents in Mark Lane fell 30 per cent. from the Tower Street improvement, and many shops in the Kingsland Road had been ruined by the opening of the North London Railway from Broad Street to Dalston. At present, each owner takes his chance for better or worse; but something might be said in favour of the principle of charging property expected to benefit from an improvement, and compensating any property that would suffer; but the equitable carrying-out of such a measure would be, he thought, practically impossible.

There was no analogy, as had been alleged, between an extra tax on ground-rents and the income-tax. The latter was not a special tax on land or ground-rents, but upon income, and was payable in respect of all incomes above a certain minimum, from whatever source derived.

True, that in respect of income from ground-rents it was charged upon the land, but that is for convenience of collection, and if a ground-rent owner's total income was below a certain amount, he could, like anyone else, claim exemption, and although his lessee may have paid and deducted the tax, he can recover it from Somerset House. Local rates, on the other hand, were special rates upon property in a district for expenditure incurred locally, and presumably benefiting the property in question.

He (Mr. BEKEN) understood Mr. TORR to say (page 392) that the doctrine of compensation to the lessee by the lessor ought to be put out of the question.

Why, then, did Mr. TORR dwell again and again upon the assumed claims of the lessee, unless to make him a catspaw in his attack on the lessor?

As to Mr. TORR's rhetorical flourish respecting the evils of the leasehold system, and underleases and peppercorns being *shams* and *pretences*, every ground-rent, whether freehold, leasehold, improved, or a peppercorn, represents the

result of a definite bargain which, when entered into, gave greater advantage to the parties mutually than any other conceivable arrangement, and, consequently, to have debarred them from making such bargain would have been an unwarrantable interference and a gratuitous injury.

Reference had been made to the case of a ground-landlord at the end of the lease requiring improvements, a premium, increased ground-rent, then an increased rack-rent, but it was not explained how he could require, at one and the same time, an increased rack-rent and an increased ground-rent, seeing that the greater includes the less.

The simple truth was that these were terms agreed upon for letting a house, not merely for letting land at a ground-rent, and had nothing to do with the subject of ground-rents, yet for every condition men of business knew there must be a *quid pro quo*.

He (MR. BEKEN) had endeavoured to discuss the question upon general principles, and would not, therefore, refer to instances, which were so prevalent, of lessors reletting to old tenants at much below the market value, because he thought that in negotiating a lease the lessor, who, in spite of much said to the contrary, was invariably subject to competition from other landlords, had a perfect right to make the best bargain he could.

Then, as to the question of taxing *ground-values* raised by MR. TORR. The idea was liked by MR. EVE, if it could be carried out, which he doubted, and he gave a very apt illustration of the difficulty in the way.

He (MR. BEKEN) would like to give another illustration. Suppose an old house at a ground-rent of £100 is producing £400 a year net rack-rent, and that the site cleared will command a ground-rent of £500. What is to be taxed here as the ground-value? The ground is worth £500 a year, but £300 a year has been sacrificed to obtain it. Tax the £500 specially at 5s in the £ and the net return is

reduced to £375, or less than the old building produced. The old building in such circumstances would have to remain.

Again, apply the taxation of ground-values to the suburbs. For example, Clissold Park, situated in a densely-populated district, and which Mr. EVE had assisted in procuring for the use of the public for ever, must have been smothered in houses long ago if it had been forced into the market by being rated at its building value. This argument applied in principle to thousands of smaller properties. Instead of specially taxing such lungs of London, it was a question whether, in crowded localities the owners ought not rather to be subsidised to keep them open.

Where, however, a site is enclosed by lofty advertisement hoardings preventing the flow of air, the income from the advertisements might be fairly charged.

The prevalent idea that local rates suffer when land remains unbuilt on was often, at most, but a half-truth. If the rates received are less, the expenses, such as roads, lighting, police, and maintenance of poor, are also less, whilst other places are built on which otherwise would not be.

Then how were the fluctuations in the value of building land to be met? A small drop in rents would often destroy the whole building value for the time being. He knew one estate which had cost £60,000, recently sold for £30,000; another, upon which £15,000 has been lent, the mortgagees would gladly sell for £9,000; and a plot of land which had cost a bank-clerk £70, would not now fetch £30. Any number of similar cases could be cited, in all which the special taxation of building land would be an act of the grossest cruelty and injustice.

It was an interesting subject for academic discussion, which system might be best in a new country, but certainly it had not been shown that the taxing of unproductive property would carry the palm, and to pass from the one

system to the other in an old country could not be done without causing immense hardship.

Mr. E. RYDE (Past-President), who occupied the chair during the latter part of the evening, in closing the discussion, said that at that hour of the evening he would sum up in a very few words. He could not do so more briefly, as regarded one portion of the discussion, than by adopting the statement which had been made, that there was no practical plan at present before the public which would carry out the views of those who advocated the rating of ground-rents. If these proposals were ever carried out, the existing system of letting land on building leases would be absolutely—if he said disturbed it would be much too mild a term to use—but absolutely set aside, and, in his opinion, it was not practicable to alter the conditions and contract which existed between lessor and lessee by an existing lease.

Then, again, he might sum up the question of rating of ground-values with this observation—that the principle of letting land on ground-rents would absolutely cease if there were to be a system of rating ground-values, for the favourite plan of giving a builder a peppercorn lease would cease, because the freeholder, who would have to receive the nominal rent, might have to pay full rates on the full value of the land. He had better be without the property.

One other point occurred to him in this discussion. Ground-rents enjoyed a special value at the present time, because they might be said to be as secure as any description of property in the country, and therefore commanded a large sum as purchase-money; but if they were made liable to pay an uncertain amount of rates it would destroy this security, and would knock down the 20 years' purchase to 15 years or 10 years, or even a smaller number.

The Meeting then adjourned.

To illustrate Mr Tho^s Ward's Paper on The Salt Deposits of Cheshire &c.

Fig A

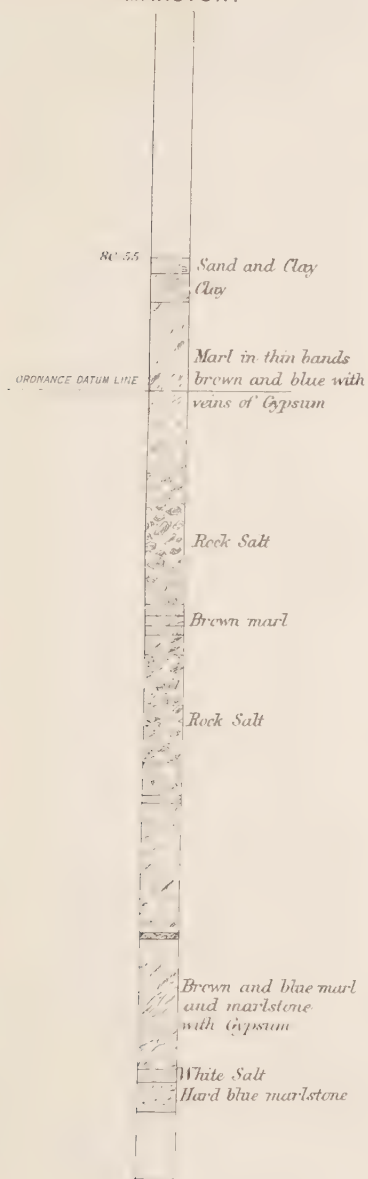
SECTION OF ROCK SALT MINE
AND BRINE PIT.
MARSTON.

Fig C.

ORDINARY BRINE SUBSIDENCE.

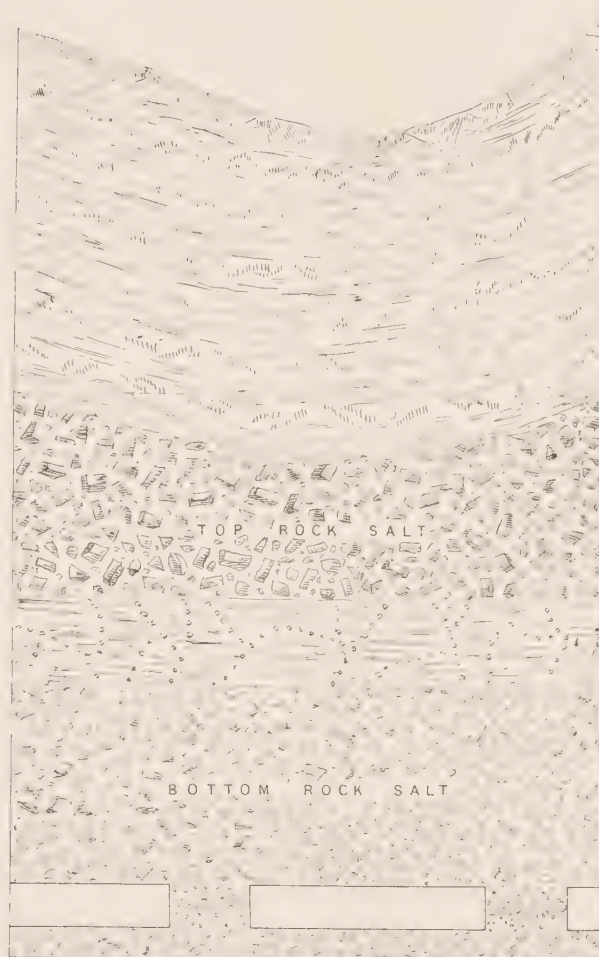
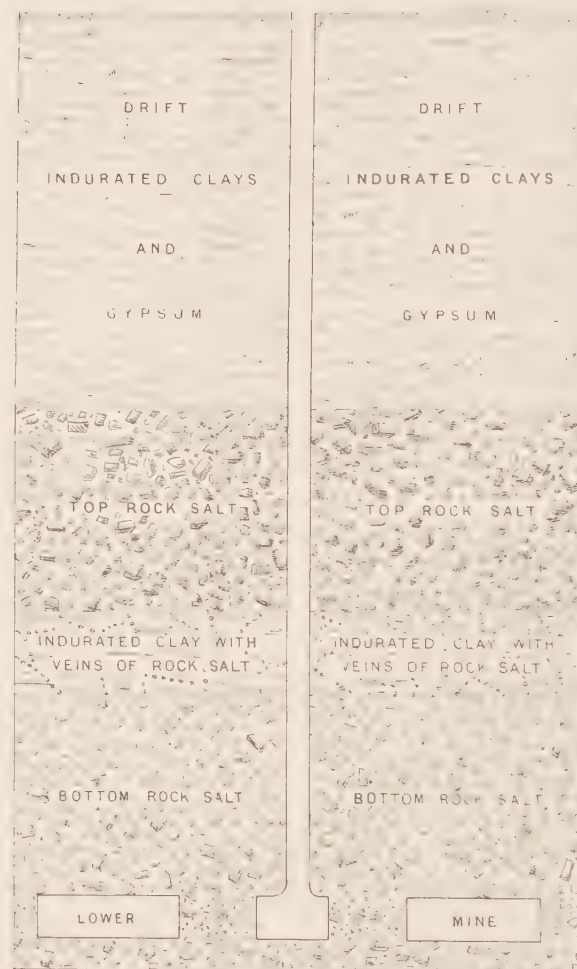


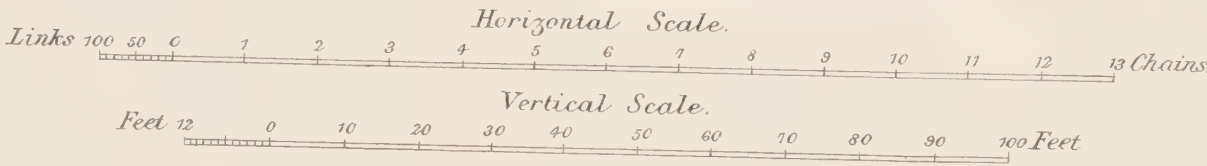
Fig B.

SECTION OF STRATA PASSED THROUGH IN SINKING
A ROCK SALT MINE. NORTHWICH.

To illustrate Mr Tho^s Ward's Paper on The Salt Deposits of Cheshire &c.

SECTION OF THE DUNKIRK ROAD, NORTHWICH.

Levels January 25th 1887
November 21st 1887
May 9th 1888
April 15th 1889



THE SALT DEPOSITS OF CHESHIRE

AND THE

CHANGES WROUGHT UPON THE LAND BY THE GETTING OF THE SALT.

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*Read at the Ordinary General Meeting of THE SURVEYORS' INSTITUTION,
May 13th, 1889.*

MR. ELIAS PITTS SQUAREY (PRESIDENT) IN THE CHAIR.

A PAPER dealing with salt will, at the present time, be very appropriate, seeing that the formation of The Salt Union has brought the matter more prominently forward than at any previous period. It is not, however, with the commercial aspect of the question that it is proposed to deal, but with salt itself, and—what is more interesting to surveyors—the great changes that are made on the surface of the land by the getting of the underlying salt.

Rock salt, or fossil salt, being a natural production and existing very extensively in Cheshire, a knowledge of its origin and geological history may be interesting, and will prepare the way for the portion of the Paper treating upon that part of the subject of more immediate interest to the Members of the Institution.

Properly studied, rock salt tells its own story, or, at all events, tells us sufficient to enable us to construct that story by the aid of what is happening at the present day. If we examine the series of lumps of rock salt now before us, we

shall find them varying in their constituent parts from nearly pure clay or marl to almost pure salt. By far the largest portion of the rock salt of Cheshire consists of a mixture of marls and salt. Commercial rock salt of the best class contains about 95 per cent. of salt and 5 per cent. of marl. The percentage of marl or clay in the entire bed of rock salt is larger than this; and the salt deposit is immediately overlaid and underlaid by beds of marl. This being so, we are immediately led to the conclusion that, as marl or clay is a fine sediment, deposited when the flowing water containing it comes to rest in a still lake, the salt, being so intimately mixed up with it, must have been present in that lake; and that therefore, the lake was a salt lake. We know that salt lakes are almost invariably bodies of water into which streams flow, but out of which there is no effluent. It may be said that streams containing mud or clay or marl run into the sea, and that as the sea is salty, why might not the salt be deposited there, and not in a lake?

The answer to this is very simple. From the intimate mixture of clay and salt in a lump of rock salt, it is evident that the salt must have existed in a solid crystal form when the clay came in contact with it. No salt will remain undissolved in water unless that water contains about 26 per cent. of salt. The sea rarely contains more than $3\frac{1}{2}$ per cent. of salt, and it is only in the waters of salt lakes that we ever find so large a proportion of salt as 26 per cent. There are instances, notably that of the Kara Boghaz on the eastern coast of the Caspian Sea, where a portion of the sea—a huge bay or gulf—is sufficiently saturated to fulfil the conditions required; but here the gulf is practically a salt lake, being separated from the main sea by a ridge over which the water is very shallow, and across which ridge a constant stream of Caspian Sea water flows to supply the

enormous evaporation from the surface of the Kara Boghaz. We may dismiss from our minds the idea that the beds of salt were deposited in the open sea as impossible. The conclusion is clear that the salt beds could only have been deposited in salt lakes, or bodies of sea water, practically equivalent to salt lakes. This is proved, or corroborated, by what is taking place annually in the salt lakes of the Steppes of Southern Russia,—in the numerous salt lakes of Central Asia, and salt lakes in various other parts of the world.* The *rationale* of the deposition of the salt is very simple. Whatever may have been the origin of the salt lakes—though probably the greater number of such lakes occupy the deeper portions of old sea bottoms, gradually elevated through long ages—it is quite certain that their waters must have been fully saturated with salt before any of that salt would crystallise out. As soon as the waters of the lake reached saturation point, the least further removal of water by evaporation would cause the salt to form crystals on the bottom of the lake; these crystals would be perfect cubes with very sharp edges. (A specimen of these is shown with the other rock salt.) It will be noticed that these cubes, though each is perfect in itself, grow into and on each other at all angles, and that there is no regularity of grouping. As long as evaporation continues, so long will the salt-saturated water continue to form crystals of salt and add to the growth of those already formed, till the bottom of the more shallow portions of the lake, at least, is covered with a crust of salt crystals of varying size. At the end of the dry season, in which evaporation is in excess, the salt lake has shrunk into its narrowest limits. When the rainy season commences, the rivulets and brooks and tiny

* See a Paper on "Rock Salt," read before the Manchester Geological Society, January 26th, 1886, and published in the "Transactions" of the Society.

streams, all dry during the hot season, bring in fresh water bearing mud or clay. The moment the water of the lake falls below saturation point it attacks the salt crystals, and eats away all their fine angles, whilst, at the same time, the clay or sediment held in suspension falls and fills up all the interstices amongst the crystals, and an amorphous mass of salt and clay is formed which is called rock salt. The greater or less proportion of clay in the rock salt indicates the greater or less rainfall of the particular season in which it was formed. As the fresh water brought down by the streams continues to flow into the lake, so does the latter increase in size, and the fine sediment is deposited over an area far more extensive than that covered by the salt deposit. It will result then from this, that the rock salt deposits will occupy the area of the salt lake when shrunk up to its smallest dimensions in the dry season of the year. The broad principle underlying rock salt deposits having been stated, it will not be necessary to enter into more detail.

That portion of our country now known as Cheshire was, in Triassic times, a series of salt lakes ; and the climate, it is evident, had its dry and rainy seasons. Without attempting to minutely describe the growth of the Cheshire salt beds it may suffice to say that, as far as known, the rock salt of Cheshire forms two very thick deposits and a number of thinner ones. The latter we need not take further notice of, as they do not affect the subject of the Paper. The lower, or "Bottom," bed of rock salt was found at Marston or Northwich in 1781 (Plate I. fig. A) ; the upper, or "Top," bed of rock salt had been discovered in 1670, whilst a boring was being made for coal. Commencing at the base of the lower bed, and continuing upwards for over 100 feet, we pass through rock salt in which the clay varies from almost nothing to nearly 100 per cent. When

the salt ceased forming, a long period followed in which the rainfall exceeded the evaporation, and only clay or marl was deposited. After about 30 feet of this had been deposited, a long series of seasons, in which evaporation was greater than rainfall, occurred, and another rock salt deposit of over 70 feet in thickness was formed. It is to this deposit that particular attention is called. Overlying this bed of salt is a bed of marl, of the same nature as that in the salt, and varying from forty feet to nearly a hundred in thickness, it having been exposed for ages to the weather, and denuded and cut into valleys running in all directions. When we consider that this mass of marl was exposed from Triassic times to the Boulder Clay period (unless it had been covered by the Lias which also has been washed away), we may imagine what extensive denudation and change would occur on its surface. The boulder clays, gravels, and sands form the immediate covering of the salt marls all over Cheshire. We are now in a position to enter upon the subject more fully.

The salt, deposited as thus described, is "got" in two ways. It is either worked by mining in the ordinary way, or it is obtained as a solution in water. In the first method, rock salt is obtained; in the second, brine, for the manufacture of white salt.

In mining the rock salt, shafts are sunk as in the case of coal and other minerals, but great precautions are taken to prevent the water met with in the gravels and sands of the boulder clay formation, reaching the rock salt. Particular attention must be paid to this, for the action of water upon rock salt* explains all the surface changes to be referred to later on.

* See a Paper read before the Manchester Literary and Philosophical Society, October 30th, 1883, entitled "The Action of Water upon Beds of Rock Salt."

The method of working a salt mine is very simple. Pillars 10 or 12 yards square are left, at intervals of about 25 yards, to support the roof. These pillars were, in the old mines, only about 5 yards square, and this, as will be pointed out later on, was the cause, in a few instances, of mines collapsing. The thickness of salt worked varies from 15 to 30 feet.

The second method of obtaining the salt is by sinking a shaft (Plate I. fig. B), and pumping up what would be in non-salt-bearing districts fresh water; but which, over the salt beds is brine, *i.e.*, water holding salt in solution. The moment water comes into contact with beds of salt it proceeds to attack them and to take up the salt in solution. The process is materially quickened by the water being in motion. When a shaft is sunk to obtain brine it is quite as necessary to keep out the fresh water met with in the overlying strata, as in the case of the shaft of the rock salt mine.

It is not intended in this Paper to treat of the manufacture of white salt from brine, but it may be interesting to explain very shortly the *rationale* of the process. It was said, earlier in the Paper, that fully-saturated brine contains about 26 per cent. of salt. The object of the salt manufacturer is to obtain this salt, and he can only do it by driving away the water. For this purpose he applies heat to cause evaporation or to drive off the water in the form of vapour. If he requires a fine salt for domestic use he applies great heat and boils the brine. The coarser the salt the less degree of heat he uses. Roughly, the formula is: the finer the salt, the greater the heat, and the less time in the pan; the coarser the salt the less the heat, and the longer the time in the pan. The salt manufacturer merely intensifies the principle on which nature works. In salt lakes and lagoons the sun is the source of the heat, and the salt forms in coarse grains. The sun never makes fine table salt. All the various

descriptions of salt, except the very finest, which are passed through sieves, are produced by modifying the degree of heat used. The crystals of rock salt are formed by very slow evaporation and very little heat. Crystals formed by heat are not so transparent as those of rock salt.

CHANGES WROUGHT UPON THE SURFACE OF THE LAND BY THE GETTING OF THE SALT.

Each of the two ways of getting the salt—by ordinary mining or by pumping the brine—is accompanied by surface changes, which differ in kind. Dealing with rock salt first, it may be said that surface changes do not of necessity accompany this method of obtaining salt. They are accidents, not essentials, and are generally attributable to two causes—either to the pillars which are left to support the roof being too small, and therefore unable to support the superincumbent mass of earth; or else, to water (the great enemy of rock salt), finding its way down the shaft and eating away the pillars, and thus letting the roof down. There are two distinct main beds of rock salt that have been worked. The first bed, discovered in 1670, was worked for a century or more, but every known mine in this bed, with the exception of one in Marston, connected with the Marston Old Mine, has been destroyed or has collapsed owing to one or both of the causes just mentioned. The destruction of mines by weak or insufficient pillaring has, however, but rarely occurred; there are a few instances, but in by far the greater number of cases water has been the destroying agent. Since 1781, when the second bed of rock salt was discovered, all new mines have been sunk to it and the salt worked. It is these mines that are so well known, and about which it is easy to speak. Very few of the mines in the lower bed have been destroyed so as to leave surface changes; but there are quite sufficient to illustrate the two

causes mentioned above. The British Mine at Northwich is a good illustration of what weak and insufficient pillaring will do. It is most interesting, but certainly not very safe or wise, to descend this mine and examine it. For a number of years the roof has been "creeping" downwards and approaching the floor.

At one time it was considered that pillars five yards square, at intervals of 25 yards, were amply sufficient. Old miners had such faith in the tenacity and strength of the rock salt, that they expressed the opinion that if no pillars were left the mine would not collapse. In working a mine it has been the rule to leave several pillars in the immediate neighbourhood of each shaft. It is evident that the weakest part of the roof must be at the shafts, and in all collapsing mines this is the first place to show symptoms of weakness. The pillars in the neighbourhood of the shafts at the British Mine have been crushed to pieces. The overlying salts and earth have literally split the pillars into fragments, and instead of neatly-worked pillars of five, six, or seven yards square we see conical hills of shattered salt and, in the roof above, huge cracks and rifts, some nearly a foot in width and extending in all directions from the shafts. The original height of the roof from the sole of the mine was about fifteen feet. Now, a man of average size can just walk under, his hat rubbing the roof. Huge blocks of the roof have split away, and areas of many square yards and of unknown thickness hang as if ready to drop, some being at least nine inches to a foot below the general level of the roof. Leaving the shafts and proceeding towards the outer boundary of the mines, the pillars all show signs of pressure, and are rifted and split and torn into thousands of fragments. At the outer edge of the mine there is less pressure, as will be evident, but even here the newest pillars show signs of snipping. So great is the pressure, that in a tunnel, or

narrow passage, made into the heart of the rock, a door, closing the entrance, has been crushed completely up. The creep of the roof is about half an inch every three months, and is fairly continuous. In this case the surface change is peculiar; it follows the roof of the mine and forms a dip or hollow the lowest point of which is near the shafts of the mine.

Insufficient pillaring then has not been the cause of much surface change. It might almost with certainty be said that no attention whatever would have been called to surface change if none except such as has been just described had occurred. The great cause of all the enormous and serious subsidences in the Cheshire salt district is water. In sinking shafts to reach the rock salt, it is necessary to pass through the sands and gravels of the boulder clay formation. These are pretty fully charged with water, and it is absolutely necessary to keep this water from getting into contact with the salt. In the early days of salt mining the water was far more copious than now, and as the shaft sinkers of those days did not know how to grapple with the water so well as those of the present day, it frequently broke in upon them, and drowned the mine. Scarcely a year passed about the middle of the last century, and from thence onward, without mines collapsing. The water found its way down the sides of the shaft, and as soon as it came into contact with the salt, channelled it out and ate it away. There are several extant shafts showing this most beautifully, where what should be a shaft of less than 4 feet in diameter, is channelled out to 10 and even 15 feet, and the face of the salt is fluted and pillared till it resembles the columns of a church or cathedral. The salt being thus eaten away by the fresh water running down the shaft, the overlying earths lose their support and fall in, leaving at the surface a conical or

funnel-shaped hole something like the crater of a volcano. The fresh water, only partly saturated on its passage down the shaft, on reaching the bottom, eats away the supporting pillars, and the roof of the mine falls in. There are large numbers of these funnel-shaped holes in the Northwich district. The sides slip down till they reach the angle of rest, and the hole soon fills with water from the sands and gravels and from the surrounding surface. These "rock pit holes," as they are locally called, form a great feature in the landscape, as will be seen by the ordnance maps. So far, the changes indicated result from the mining of the rock salt.

Greater changes by far, however, result from the second method of obtaining the salt, viz., by pumping it up in the form of brine. In earlier times more salt was mined than manufactured from brine. Now fully ten times as much is made from brine as is mined. From the very earliest times brine, in the shape of salt springs, was known and utilised. The Romans, Saxons, Normans, all made salt at Northwich and the other Cheshire Wiches, at Nantwich and Middlewich, as their successors have done ever since.

Brine is simply the ordinary fresh water of the sands and gravels of the boulder clay formation that has found its way to the salt beds and has saturated itself with the salt. It would take too long to give the history of the working of this brine during many ages; it will suffice to describe the process now going on daily on an enormous scale. Every shaft that is sunk in a brine-bearing district, and out of which the brine is pumped up, becomes a centre towards which the salt-laden water flows. It must be clearly understood that brine is not like rock salt, a definite quantity forming a lake or stream, out of which the pumps can go on taking it away till it becomes exhausted. This is a popular idea, but an erroneous one. The brine is being

made daily and hourly. As the salt water in the neighbourhood of the pumping centre is taken away, all the surrounding brine moves towards the shaft to supply its place. This movement takes place in the whole body of the brine overlying the bed of salt, and is communicated to the fresh water in the formations outside the salt district, which flows in to supply the place of the pumped-up brine. If we imagine a line drawn along the course taken by the water in travelling over the surface of the salt to the pumping centre, we might graduate it from perfectly pure fresh water at the outside of the salt bed, through all degrees of salinity, to perfect saturation at the shafts. Following the flow of the water from the place where it is quite fresh, we should find that the moment it came into contact with the salt it proceeded to feed upon it, and in its course, to take up more and more salt, till, being perfectly saturated or containing about 26 per cent. of salt, it could take up no more, and would then pass on, leaving the salt bed untouched.

Owing to the rock salt being a mass of marl and salt varying greatly in the proportions of each in different parts, the stream of flowing water or brine naturally follows the line of least resistance, that is, the one where the salt prevails most largely, and hence, the surface of the salt is unevenly channelled or furrowed. Water in motion dissolves salt more rapidly than when still; so that the streams of salty water cause more solution of the salt surface than if the water merely stood motionless. The specific gravity of saturated brine is 1.2, therefore in motionless water standing on a bed of salt the strong brine lies at the bottom, whilst the upper portion is very weak.

We shall now be able to understand the action of water on salt, and to trace the inevitable results. Water dissolves the salt, and holds it in solution; it does not mechanically wear away the salt and carry it in suspension like mud.

Having seized it it never lets it go unless compelled, but keeps it in solution invisible to the eye. The constant pumping of brine causes a constant flow of water over the surface of the salt, and a constant solution, or eating away, of the salt in regular channels, like tiny rivulets. The more rapid and extensive the pumping the greater the solution of the salt and the wider and deeper the channels which are eaten, or dissolved out. As the channels widen and deepen, owing to the removal of the salt, the overlying earths, deprived of support, gradually follow the contour of the rock salt, and the work going on below is repeated at the surface. As the long-continued action of water on the surface of the earth has produced most of the valleys, so does the action of water on the salt produce valleys; but rock salt, being far more soluble by water than other earths are, is more easily and rapidly worn into channels. A violent storm on the surface of the earth produces rapidly-flowing streams of water, which carve and cut it into gullies and ravines; so does rapidly-moving water below cut the rock salt into deep ravines, or channels, and the overlying earths, following the diminishing surface of the salt, form deep valleys on the surface of the land whose sides become stepped and broken. The normal form of a subsidence caused by brine-pumping is that of a trough, or synclinal (Plate I. fig. C). This trough may be shallow, and more or less extensive where the pumping is not very great, and the motion of the flowing brine slow; or it may be very deep and of varying widths where the flow is rapid and the pumping extensive. These valleys, or troughs, are plainly to be traced, especially in the Winsford district. There, the whole of the pumping stations lying pretty well in a line in the Weaver Valley have caused two principal lines of flow. One of these is directly south and along the course of the stream. This is the main one, and the valley, or synclinal

formed is a very wide and deep one. It is fully half a mile in width, and the depth very considerable. The lower portion forms deep lakes, daily increasing. The second line of sinking is noted, not so much for the regularity of the trough or synclinal formed, as for the sudden falling-in of portions of the valley bottom, and the formation of a series of small lakes or holes of great depth. In the first, or largest synclinal, the earths follow continuously the lowering face of the salt; in the second, they seem to remain suspended, and only to fall at intervals in certain portions. These troughs, or valleys, do not extend quite to the pumping centres. The brine becomes saturated before reaching these, and the destruction of the rock salt ceases. To many people this peculiarity causes much astonishment, for they expect to see most sinking where there is most pumping. This fact proves conclusively that the brine does not exist as a subterranean lake; but is being constantly produced.

At Northwich, the matter is complicated by the existence of numerous old top mines, which had filled with brine years ago. The troughs, or valleys, crossing these old mines have become broken up, and most extensive lakes have been formed. However, there is one very considerable line of subsidence, traceable in the form of a loop right through the very heart of the town of Northwich, and towards the Winnington pumping centres.

The results of this surface change are most serious. We will trace them as they affect land without buildings upon it, and as they affect buildings. The greater number of the subsidences follow the course of the rivers and brooks of the district. If this were not so, undoubtedly the brine which had accumulated for untold ages would long since have been exhausted.

It will follow, from what has been said as to the manner in which the water acts upon the salt, that the synclinal

formed will be a closed one, that is, will not have either an inlet or outlet, for the sinking commences at the edge of the salt, up to which point there is no depression, and terminates before the pumping centre is reached. The result of this is that the natural drainage of the district is interfered with, and the water lies in small pools, or lakes, called flashes. If these depressions lie along the course, or in the immediate neighbourhood of a brook or stream, a lake is very quickly formed. The earths overlying the salt having to follow the contour of a deep and wide trough, become broken and rifted, and the sides of the trough form a series of steps, or terraces, the earth being broken up for long distances in lines parallel with the course of the underground brine current. Down these rifts, or crevices, in the earth the water penetrates, and increases the solution of the salt below; and hastens the deepening and widening of the basin, or trough, and consequently increases the area of the lake occupying the trough. These lakes form very conspicuous features in the landscape.

When these valleys, or troughs, form in a district where there are houses, or in a town such as in Northwich and some parts of Winsford, the destruction wrought is very great. The houses occupying the bottom of the hollow are doubled upon one another, and are pushed into each other, causing much cracking and breaking of woodwork and brickwork, as well as of glass in the windows. As we proceed up the sides of the trough we find the part of the house nearest the bottom of the trough travelling quicker than the part further away and pulling itself from it, leaving rifts and cracks in the walls, and drawing out beams, pulling windows to pieces, and working ruin and destruction in the building.

Changes of this kind going on soon render all maps and surveys, where this sinking takes place, of very little use.

When the surveyors of the Ordnance Survey Department came to check the levels of those who had gone before them, they found many and great changes. The latest Ordnance maps require a thorough revision to bring them to date, and then a short time would make everything wrong again. Few, if any, districts in England require so often levelling as does the town of Northwich and neighbourhood. New surveys are continually being made, and several costly law-suits have resulted from subsidence. A few years ago the local board had to raise one portion of the main street of the town, which had sunk so low as to be flooded every "fresh" that there was in the river. The houses at the side of the sunken portion were partly buried, and had to be rebuilt. The owners sued the board for the cost of rebuilding. The board pleaded that it had merely restored the street to its original level. Plans were produced and levels shown at various periods. The board proved that the road had not been raised above the original level, and the decision was given in its favour, and the case is now appealed to as an authority to settle all questions of the kind.

Recently, owing to the subsiding of the land, the bridge over the River Weaver had sunk so much as to obstruct the traffic on the navigation below. The trustees of the River Weaver raised the bridge, and by so doing increased the steepness of the gradients on the approaches. The local board indicted the trustees for obstructing the bridge and rendering it a nuisance. Again plans and levels were required, and a comparison of old and new plans and old and new levels enabled the jury to decide that the approaches had been so altered as to become a nuisance. Frequent cases of arbitration have arisen on disputed boundaries and encroachments. Buildings at the top overhang considerably, and foundations slide away. One street in the town, near an old rock-pit hole, has become several feet wider, owing to

the side nearest the centre of sinking sliding away more than the further side. In this case, after a number of years had passed, when a new survey took place and new levels were taken for remaking the street, it was found that the houses then standing were three feet or more from the original foundations, which were discovered under the kerb stones of the parapet.

In a recent survey, the plan of which is before you, it was found that one of the pegs driven into the ground had slid two or three feet out of the line, causing a good deal of trouble, whilst the levels had altered most seriously. A section of the same district at several periods, only a few months intervening, will show the changes wrought (Plate II.), whilst some photographs of the district will indicate what such changes mean. It becomes impossible to make plans agree where the land forms synclinals. An originally level field takes the form of a deep trough, and to show the effect of the pressure, the turf at the bottom of the synclinal is squeezed up into rolls, whilst the sides of the trough show steps some two or three feet in height. Wooden fences, following the sinking of the land, become squeezed together towards the bottom of the trough, and posts eight or nine feet apart are brought within five or six feet, the rails bending and breaking and zigzagging to accommodate themselves to the pressure. Boundary marks get shifted or buried, and, for all purposes of checking, old surveys become useless. A most curious instance of change of position of walls occurred on Ashtou's Salt Works, Witton. The land commenced to sink at a certain centre, and when sinking of this kind takes place—the centre generally being an old shaft—the cracks form concentric circles, and, as the subsiding land deepens, the cracks form larger circles. One of these circles passed through the end of a long building and came out again far up the side. The portion of the building, and

especially the side wall, affected by the crack, began to move towards the sinking centre. The further side wall and portions of the end remained unmoved. The foundation drew away, carrying the lower portion of the wall, whilst the upper was held fast by the principal beams, whose ends were fast in the side wall, which stood unmoved. In a short time the weight of the principals was taken off the moving wall by props, and the wall was stayed outside. After a few months of steady motion, the curious sight was seen of a side wall having travelled completely away from the building of which it formed a part, leaving a space of between three and four feet. But for the property all belonging to one person a question of encroachment would have arisen, and surveys and measures and plans would have been called into use. Similar changes often occur, and render accurate measures absolutely necessary. Inches and parts of inches are important when neighbouring buildings encroach in this way.

To be accurate in levelling, it is necessary to take a datum point a long way from the sinking land. Intervals of a week or two often cause great changes, as where a road recently levelled sinks bodily, and a huge chasm appears in its place. This has happened several times during the present year, and London Road, Northwich, has sunk so frequently that now huge balks of timber are laid along it and strong planks fastened over them, and then covered with earth and stones. The most serious changes are those where the land disappears entirely, being covered by water—all the old boundaries disappear, and whole fields are swallowed up, as in Winsford, Northwich, and Marston. Every year sees the water still further encroach, and new surveys are requisite at frequent intervals. It is most interesting to inspect the maps made from 50 to 100 years ago, and to compare them with the state of things as

now existing. They are perfectly useless, and entirely new surveys are needed. Lakes are formed in the midst of fields, and fences and trees gradually sink till only the tops of the latter are left. Highway authorities are put to their wit's end to keep their roads in order. The Marston Road crossing over a deep trough has sunk more than 40 ft. in the last 15 years, and has just been abandoned owing to a huge chasm many feet in width forming across it. It is needless to say that local board surveyors are often in great difficulty. Sewage pipes sink and form siphons or else draw out at the joints. Water pipes and gas pipes either draw out or smash up or sink and break across. Day by day the ground requires opening to inspect pipes, and the level is in constant use.

All these changes are the direct result of getting the salt either by mining or, in the majority of the cases, by the pumping of the brine. In no case has any property-owner ever been compensated for the damage done to his property. The rock salt, which belongs to him, is carried away by the water or weak brine on its way to the pumping centre, and the property on the surface let down, pulled to pieces, or seriously injured; but there is no remedy. There are so many pumping centres, and the troughs, or synclinals, cease before these centres are reached, that it becomes impossible to say which particular pumper amongst the number is responsible for any particular damage. Undoubtedly the whole of the pumpers cause the sum total of the damage, but the law does not allow the whole to be put into one indictment. Eight years ago the local authorities and the property-owners tried to get an Act of Parliament to enable them to levy a tax of not more than 3*d.* per ton on all salt pumped up in brine. After a fight lasting 11 days the Bill was lost. At the present time the same authority and the property-owners are trying to get a Royal Commission to examine into the

matter. There can be no doubt but that a great injustice is being done to property-owners who are not salt proprietors, and something should be done to remedy this. Should any plan be devised, the services of surveyors will be called into requisition, for surveys and plans and levels will be often required, and the surveyor will be the man to whom the details and difficulties will be referred.

Mr. JOSEPH LUCAS (Professional Associate) had great pleasure in proposing a vote of thanks to the author for adding another to the many practical Papers which had been read before the Institution. He, as a geologist, felt that the subject, if treated from a purely theoretical point of view, might have been made profoundly uninteresting to any but experts; but the author, living, as he did, in the district affected, and seeing the changes that were going on, and the destruction of property wrought by them, had evidently written feelingly on the matter, and so had imparted to the Paper an interest which it might not otherwise have possessed.

On the theoretical portion of the subject referred to in the earlier part of the Paper, he proposed to say but little; but with regard to the Trias, or, at least, those portions of the Trias which exist in England, his view was that there was no justification at all for the assumption that it ever formed part of an oceanic area—in fact, the evidence tended rather to prove the opposite. Remains of an organic kind were exceedingly few, but what few there were, were all, he believed, terrestrial. He was not a palæontologist, and the knowledge he could bring to bear on the point was only of a general kind; but he believed he was stating the case correctly when he asserted that there was, as a rule, a complete absence of marine fossils, although on the shores of the Caspian there were evidences of a marine fauna, such

as afforded ground for assuming that the Caspian had at one time formed part of the Arctic Ocean.

On the other hand, the formation of the English salt deposits had been the result of a very gradual process that had gone on for ages, the last result being the deposition of salt in the red marl. The presence of limestone, gypsum, and other beds similar in character undoubtedly pointed to the existence of large lakes which had no means of drainage other than evaporation, and, as the author had pointed out, the water was originally fresh, but in the course of a long period of time had become salt. This he presumed to be also the case with Lake Utah, which, from its great height, could not be assumed ever to have formed part of the ocean. It presented an example of a salt lake which had become salt in the course of time, simply by the process of evaporation.

The salt crystals exhibited had, he imagined, been formed under water, and crystallised on the bottom.

Mr. WARD: They were formed under water.

Mr. LUCAS: The author had remarked that in the early days of salt mining water had been far more copious than at present; but where had the water gone to?

Mr. WARD explained that it had been pumped up—the continued pumping of the brine having exhausted nearly all the fresh water in the district under consideration.

Mr. LUCAS: Again the author had remarked that as the salt water in the neighbourhood of the pumping centre was taken away, all the surrounding brine moved toward the shaft to supply its place, and that the subsidence was least at the pumping shaft. This might be due, as it seemed to

him, to the solvent power of the water becoming exhausted as it approached the shaft, as, when saturated it could not take up more salt.

This theory threw some light on a question not altogether remote from the one under consideration, namely, the wearing away of chalk by water. In chalk beneath the tertiary formation there was very little water, and very few fissures existed, and the explanation which applied to rock salt applied also to water in the chalk, for where the solution had become saturated in either case it could not act any further on the rock. The point was an interesting one, and appeared to throw considerable light on the subject of the flow of water in other soluble strata.

The author had remarked that the lines of subsidence followed the lines of the valleys. Was this in consequence of the shafts lying along the lines of the valleys? Otherwise it seemed a *non sequitur*.

With regard to the legal liability, the chief difficulty seemed to arise from the large number of the pumpers. No one in particular could be brought to book for the damage he might have caused, for it could never be proved who was the offender; but surely, if such a body as the Salt Union were to monopolise the pumping in a given district, the issue would be simplified by the fact that there would be only one defendant.

Mr. J. E. BANKES (Associate) said that he seconded the vote of thanks to the author with very much pleasure.

To those who knew the district, the Paper explained fully the cause of the extraordinary state of things now existing. To those who did not know it, the Paper would be very interesting, as it so clearly set forth a state of things which nothing but so practical an explanation could bring home to the mind. And, from another point of view also, the Paper

was extremely interesting to persons who, like himself, were lawyers, because, when one saw whole districts so affected, and the immense damage which had been done to property of all kinds by the process of brine pumping, it seemed extraordinary that no means of obtaining compensation should be available, and it could not fail to set every lawyer thinking whether there was not some flaw in the law dealing with the right of support and the rights of adjoining owners.

He himself did not so much think that the principles of the law were at fault as that the present position was due to an abnormal state of things never contemplated by the law. If it were a case of one proprietor and one salt worker there would be no difficulty about the question of damage. The difficulty arose from the number of salt workers, and the impossibility of tracing the damage home to any particular person. There was no doubt that every surface owner had a right to support, as a natural right; and if a man owned land or ancient buildings upon it, no one had a right so to excavate below the surface as to let down either the surface or the buildings. At first sight there were two principles of law which might be thought, in this instance, to protect the worker of salt. One was that there was no property in subterranean water that did not run in defined channels, and it might be suggested that the brine pumped from various stations was in the same category as subterranean water that did not run in defined channels, and that anybody could sink a shaft and be at liberty to pump out brine in the same way as a person could sink a well and pump up water.

Another principle of law which might be thought to protect the salt worker was that no one had *primâ facie* a right to support from water. But he thought it had been clearly pointed out by Mr. WARD that neither of these principles really applied to the case under consideration, for

pumping brine was not like pumping petroleum, which was actually found in huge chasms. What the Northwich pumpers did was, as it were, to invite the subterranean water to run over their neighbour's rock salt, and by that process not only did they abstract their neighbour's salt, but they let the surface down also ; thus, it appeared to him, adding insult to injury. It was not a case of merely abstracting the subterranean water which percolated through the soil—the salt workers did not want to do that, their object being to attract the water so that it might flow to their shaft over their neighbour's salt. In doing this they violated two distinct principles. First of all they committed a trespass on their neighbour's salt—they took his salt, which they had no right to do ; and secondly they let down his surface.

If the surface owner could only “find the pea under the “right thimble,” or, in other words, make certain of the person who was doing the injury, he had a simple legal remedy against the person who either took his salt or let down the surface of his land.

As had been pointed out by a previous speaker, it might be that there were happy times coming, not only for surface owners but for the lawyers. If the Salt Union ever became the only pumpers, there could be no question as to whose operations caused the subsidence, and the consequent damage to property. Whether it had been pointed out to the promoters of the Union that if they got an absolute monopoly they would be the sole and only defendant to an action for deprivation of support, he did not know ; but at the present moment he could only consider the number of new salt works now starting to be a great benefit to the Salt Union, as relieving them from the possibility of being found the only parties liable for damage caused by pumping.

Mr. T. M. RICKMAN (Fellow) heartily supported the vote

of thanks to Mr. WARD for his interesting Paper, which most vividly described the curious appearance which the district presented. He (Mr. RICKMAN) had been there two or three years ago, under the guidance of Mr. WARD, whom he found correctly spoken of in the district as the person best acquainted with the whole ins and outs of the locality.

There were to be seen extraordinary round holes and deep pits, such as were only met with elsewhere in a volcanic country, and broad channels of navigable water covering lands that in times not long past had trees growing on them. Fences were distorted in every direction, and pipes once laid below the surface were exposed to view, crumpled up and bent. The town of Northwich was literally broken to pieces, and many of the buildings were in ruins. He believed special by-laws had had to be framed for the construction of houses in that locality, that timber might be introduced into the foundations in order to hold the whole structure together.

Turning to the question of brine pumping, there was one thing that he should like to ask the reader of the Paper, viz., why no mud came up. If there was so much marl and clay mixed with the salt, how was it that the brine came up so perfectly clear?

He thought that the statement in the Paper, that the subsidence followed the valleys, had been misunderstood. It seemed to him, from the Paper, that the surface subsidence followed those subsidences which were underneath; that the water found places where it could more easily affect the salt—where there were underground valleys—and that the surface valleys now filled with water really only represented those portions of the bottom pits where the salt had been most freely dissolved, and had let down the synclinal from the lower salt bed right up to the river, and thus the valleys

filled with surface water followed the lines of the least resistance in the strata below.

Mr. T. JONES (Professional Associate) joined with Mr. LUCAS and Mr. BANKES in thanking the author for his instructive Paper, but the question seemed one for surveyors to solve. It was a knotty point which the inhabitants of the salt districts had before them constantly, and it was for the surveyor to see what practical remedies could be devised for getting over the difficulty, more especially in arranging compensation to the owners or occupiers whose property was injured. Of course land-agents at present treated the question from the legal standpoint—that there was no remedy against those who abstracted subterranean water, and it was, unfortunately, in the case of brine pumping, the water which did the mischief. If it were a case of ordinary mining of the salt rock all these surface depressions, or rock-pits, as Mr. WARD called them, could be distinctly traced to their respective causes; but the quantity of the salt obtained in that way was a small proportion of the whole and principally used for agricultural purposes or very little else, while all the brine for manufactured salt was obtained by pumping.

It was hardly worth while to take up the time of the Meeting by discussing the question of mining, as that was not really the cause of the injury to the owners in question; but to a mining engineer, pillars five yards square seemed absurd where there was no overlying hard rock at all, and where the marl above was bound to follow the abstraction underneath. Of course the proximity of old mines and workings necessarily imported more water. As Mr. RICKMAN said, he supposed the whole salt area was saturated with water gravitating from the surface valleys downwards, and the pumping of the brine would therefore continue so long as the salt beds lasted.

It seemed difficult to define the limit of the salt bed. Was it possible to ascertain this limit? For at that point would be, he supposed, the limit of safety to the adjoining owner, and all property within that limit would be more or less affected by the possibility of collapse.

He had seen in this very district a great deal of injury done to property for which there was no remedy whatever. He did not himself see how it was possible to devise a remedy while there was so large a body of salt workers to deal with. Of course the Salt Union, had they been the only sinners, might have been proceeded against, always supposing that they could not have alleged (as they would no doubt in case of a claim for damage seek to prove) that the real cause of damage was anterior to their taking possession of the property. The other new ventures now going on seemed to him only likely to increase the mischief, without improving the prospect of remedy to the owners. He observed that Mr. WARD said "the sinking commences at the edge of the salt, " up to which point there is no depression, and terminates " before the pumping station is reached." He should like to know if it was possible to define the course of these depressions to the different pumping stations. If the Salt Union was likely to be so great a success as was indicated by the formation of new Companies, the only present remedy for damage seemed to be that every owner should sink a brine shaft on his own land and pump away against his neighbour, so that all should sink equally.

Mr. F. MARSHALL (Associate) said that as he had been concerned in some of the legal proceedings to which Mr. WARD had referred in his Paper, he would like to make a remark or two. It seemed singular that, after the lapse of at least a century since the commencement of the working of some of these salt pits, the buildings seemed to be so

ill-adapted to the shifting soil, and that legislation with regard to salt should be so inadequate for giving compensation to those who undoubtedly suffered. Perhaps the imperfect state of legislation on the point arose from the fact that, at the time the maxims governing the subject grew into law, the industry was so little developed. In a community where the manufacture of salt was the staple occupation of the people, he apprehended the laws should be adapted to the special and peculiar circumstances connected with it. He could not help observing that, seeing how many hundreds of thousands were turned over in that industry, it was remarkable there should be no legislation directed to meet cases of loss by injury to property such as had been cited, and he hoped a Royal Commission would be appointed with the view of thoroughly considering the points arising from the working of salt—seeing how inadequate the Bill was that had been brought in some years since,—so that those who undoubtedly suffered might have some means of recovering compensation. A speaker who preceded him suggested quite truly that shopkeepers and other persons who lived in the salt districts knew the peculiarities of the district in which they were settling; but the question was whether they were able to put on such prices as to get a profit commensurate with the loss that they sustained. Unless all commodities realised enormous prices as compared with other neighbourhoods, he apprehended that living in the salt mining districts would be rather a misfortune for the inhabitants than otherwise.

Mr. S. WALKER (Fellow) desired to ask the author of the Paper whether, in the case of the conveyance of land in a salt district, the salt was reserved as a mineral, or whether the land was sold right down to the centre of the earth. As was well known, in dealing with land in many parts of England

the coal measures were specially reserved, and the land was sold not including the minerals underneath; but if the land were sold with the salt stratum included in the devise, then, he apprehended, to take away the salt out of that land was evidently a trespass, and the owner of that land had clearly a right to claim compensation. It seemed to him that the most practical way to meet such claims would be to charge a royalty on all salt manufacturers, and thus establish a fund out of which compensation for damage due to brine-pumping could be paid.

Mr. E. C. WICKES (Visitor) asked Mr. WARD whether he was of opinion that if there had been no pumping whatever at any time there would not still have been subsidence, not to the same extent as now, perhaps, but still a subsidence, owing to the natural flow of water over the rock salt, and to its subsequent escape and evaporation.

Again, he would ask whether, in order to get compensation, an Act of Parliament would not be required? He thought there could be no doubt that it would be, and that a very much wider question would be opened, because if payment for damage caused by brine-pumping could be recovered from a salt-owner, it would be only fair and reasonable to make people pay also for pumping (say) running sand, where a subsidence was the consequence of such pumping. He thought it would be exceedingly invidious to make one class of people pay compensation and not make others do so for similar operations.

When the owners of house property in Northwich or Winsford or elsewhere in the district bought, did not they purchase with the knowledge that the property was liable to subsidence, and was not the price given regulated accordingly?

When royalties were charged for getting brine, would

not the amount of the compensation be payable by the receivers of the royalty?

He thought these rather pertinent questions, which he should like Mr. WARD to answer.

Mr. WARD, in replying to the criticisms on his Paper, said he would endeavour, as shortly as he could, to answer the various questions that had been addressed to him.

First, Mr. LUCAS had questioned whether salt lakes had, as had been thought by many, been originally fresh lakes, but, owing to salt accumulating in them, had become salt in process of time, or whether they were really portions of the sea bottom. They might be either, but there were sufficient facts to show that the great bulk of them had been really parts of the sea bottom. In the south of Russia, for the distance of 60 or 70 miles from the Caspian Sea, the steppes or plains had numerous salt lakes. The old coast line of the Caspian is easy to trace, and between this line and the present margin, a series of salt lakes is found, which yield large quantities of salt—so large that Russia is supplied almost entirely from this source. The salt had been forming for generations, and the process was still going on. On the north-eastern and eastern coasts the same thing had been taking place for a long time, and the lakes had undoubtedly all been portions of the sea bottom, as also had the Kara Kum Desert. In the Kara Boghaz Gulf it is calculated that over 100,000 tons of salt is being deposited daily. An immense area had been enclosed by the formation of a bar across the mouth of the gulf, evaporation is very rapid, and the water flowing over the bar from the Caspian Sea is acted on by this rapid evaporation, and salt is forming almost continuously.

In the central parts of Asia, again, there were found dried-up salt lakes. The old sea line was distinctly trace-

able, although it was calculated that Central Asia was as high as any part of the world. There were large areas of sand which had evidently been part of the sea bottom. The Great Salt Lake to which Mr. LUCAS had referred, as a salt lake which at one time had been a fresh water area, was undoubtedly an old sea bottom. Vast beds of rock salt were to be found in the neighbourhood. Only a few years ago an extensive bed of salt, 14 or 15 ft. thick, was found in the Sink of the Carson at the bottom of a dried-up lake, and from Utah down to the Colorado River, as well as in some other portions of deep-lying valleys, traces of salt were visible. This subject had been dealt with in a publication by the American Government, in which conclusions were drawn similar to his own. He did not say that all salt lakes had been sea bottoms, but undoubtedly, in most cases, as the rocks around them were sedimentary, they must have been at the bottom of water at one time, and that must generally have been the bottom of the sea.

The Cheshire salt lake in which the salt beds had been deposited, had no doubt been a sea bottom. From the north of Lancashire right down to the Severn there were Triassic rocks, and in the whole of this district were to be found traces of salt. In Germany, also, rock salt and potash salts were to be found containing all the salts found in sea water.

Mr. LUCAS explained that his objection only applied to the English area.

Mr. WARD, resuming, said it was possible at one time they might have been fresh-water lakes when marl was deposited, but it was difficult to conceive how they got salt so soon unless they communicated with the sea.

A treatise had been published by Von Baer, in which he gave an instance of a salt lake having been formed

by a bar gradually silting up the mouth of a bay, which, becoming sufficiently elevated, cut off the bay and left it a salt lake.

As to the sinking being along the lines of the valleys, it might probably be taken for granted that, when the surface of rock salt was exposed to water flowing over it, the water would run in channels and denude the original surface of the rock salt along the lines of those channels. Then the superimposed strata being deposited over these channels would form a valley, and the original surface would influence the contour of the valleys above. What he had meant to say was simply this, that where a stream of water ran, if there was any underground sinking below that stream, and following the contour of the rock salt, the ground along the course where the water flowed would become broken and fissured, and the water would get down the rifts and eat away the rock-salt still more quickly.

He agreed with nearly all that Mr. BANKES had said about the law of the subject, and as he (Mr. WARD) had had more to do, perhaps, with these questions of subsidence than many, he had gone through those law questions many times. The conclusion to which he had come was that when the law of underground water was first formulated, no such thing as subsidence from the pumping of brine was known or anticipated. If it had been, there was no doubt the law would have been adapted to it. Even the case of chalk was hardly analogous, for no rock was so soluble as salt. Pumping, as had been said, invited the water over a neighbour's property and took the neighbour's property away. No doubt, if this had been known when the law of underground water was first established, the brine would not have been considered water any more than brandy or milk would have been called water; for water, with 25 or 26 per cent. of salt in it, was no longer water.

As Mr. RICKMAN said, special by-laws had been provided to regulate building in the neighbourhood of the salt works, and builders were allowed to construct houses of balks of timber with brickwork between. The greatest difficulty had been experienced in getting these by-laws sanctioned by the Local Government Board, and red tape was so strong that it was predicted they would not be passed. The bye-laws were sent to the Board, who returned them with the main requirements struck out. After constant and reiterated applications on the part of the local authorities, the Board at length sent someone down to see the state of things. He (Mr. WARD) went round with this gentleman, who was astounded at the state of affairs, and the result of his visit was that the desired by-laws were very soon after sanctioned by the Board.

Then, as to the damage caused by rock pits, as the owner of the surface also owned the salt, no claim arose if damage occurred. It only arose in cases of pumping up a neighbour's property from a distance. If anyone sold his rock salt, he made a bargain with the purchaser, as he (Mr. WARD) had done recently, that he would work in such a way as not to bring the top down; and if he were only reasonably careful he need not do any damage at all. Therefore, as regarded rock pit holes, no compensation was required.

It had been asked by Mr. RICKMAN why it was that no mud came up with the brine. Unfortunately it did sometimes, and in the Middlesborough district had caused endless trouble. There was a very extensive bed of red sandstone there, and by boring through this the water was allowed to run down to the rock salt below. In doing this it ate the salt away, and the marl sometimes fell and choked the blast-holes of the pumps, so that mud was frequently pumped up for days together. But in the Cheshire beds the streams

did not run rapidly enough to carry clay in suspension. In 1880, when water got into the old mines, an enormous quantity of muddy brine was pumped for three or four days ; so that although, as a rule, brine was clear, there were exceptions to the rule.

The limit of the salt bed could not be exactly determined, because in many parts the clay or marl had grown so closely to the rock salt that there was no chance of the water getting at the salt, but in those cases where the salt marl was broken, the brine was then formed. It was all chance whether one got brine even in the middle of a brine district. The shaft he spoke of just now was right in the centre of a salt pumping district; yet there was no brine on the rock salt there.

It had been said by Mr. MARSHALL that curious questions had arisen, and these questions showed, he thought, that the law on the subject required altering to some extent, though there was not the least doubt that, if it could be determined who had by his working caused the damage, there was an easy remedy, even under the existing law.

With regard to conveyances, the minerals might be sold without the surface, or the surface without the minerals, or both together. He had had much to do lately with all three methods. Of course, where a man bought all, no one had a right to take any part of it from him, and when he bought the surface only, he always stipulated that his support should not be taken away or his surface let down.

Some important questions had been put by Mr. WICKES, on the Subsidence Bill of 1881, which would take too long to answer fully. He asked whether if there were no pumping, there would be any subsidence. He (Mr. WARD) would unhesitatingly say no,—nothing that could be traced or observed during a lifetime. He argued thus from the fact

that there was no subsidence in the salt districts until the pumping of the brine became very extensive. When the pumping had been small, there was a large body of brine that had accumulated for ages, and the pumps did not cause motion over the rock surface, so that the eating away was gradual, and it would take a geological age, almost, to make any appreciable impression.

The subsidences had kept pace with the growth of the salt trade. In 1770, sinking started with 100,000 tons a year pumped up. It was now $1\frac{1}{2}$ million tons, and the sinking had gone on in the direct ratio of the pumping. He had gone into the question almost all over the world, and had found that where the pumping was slight there was no appreciable sinking, and that it was only where the pumping was excessive that serious subsidence of the surface showed itself. He held the opinion most firmly that with no pumping there was no appreciable subsidence; and this in spite of the authority of some great geologists.

With regard to the question of the countervailing advantages enjoyed by owners of houses within the brine pumping area, a man living in a salt district was not compensated as a man was who lived in a coal district, or in any other mineral district where no damage was done to the property. In these cases the inhabitants were all equally benefited by the trade carried on; but it was different in a salt district: a neighbour's shop might sink, and one's own, on the other side, might not. If a shopkeeper's house sank he could not put a halfpenny a pound on his sugar to compensate himself, for the customers would go to the shop which had not sunk, and there was, therefore, no chance of his recouping himself, in this way, for the damage he suffered.

It had been remarked by Mr. WICKES that property in these districts was bought with the knowledge that it was

liable to sink. But, in many cases it was property which, within the memory of man, had never sunk, and in twelve months sank so rapidly that the house fell down about one's ears. No one would buy property with a knowledge that it would soon sink. He (Mr. WARD) had bought a good deal of property in the district, and hoped it would not sink, and, moreover, he did not buy it from the man who was going to make it sink. As he bought it he considered himself entitled to keep it, and if anyone took his salt he was entitled to damages for it. It was only fair, he thought, that the man who derived the profit from the salt should pay for the damage caused by the getting of it.

THE PRESIDENT, in summing up the discussion, said all who had listened to this charming and interesting Paper of Mr. WARD's, and especially to the supplemental remarks he had made in answer to the questions put during the discussion, would concur in Mr. RICKMAN's remark that Mr. WARD was *the* man who knew all about the subject.

With reference to the remarks that had been made on the subject of compensation, if Mr. BANKES and his legal friends would get the law settled, there were many gentlemen present who would be quite able to apply a system of compensation to any extent that might be desirable.

It struck him in the course of this interesting discussion, that the speakers, generally, had applied themselves chiefly to a consideration of the injury which the pumping of brine and the enormous salt business in that great district had brought about. Instead of looking at the wrongs and injury on that side of the question, he himself was inclined to give very great weight to the enormous value of the blessings and advantages which the salt industry of England had brought to the whole world. This was very forcibly brought home to him by reading a book familiar, he supposed, to

everyone, viz., "Drummond's Travels in Central Africa." The author of that book said that when on his travels near Lake Nyanza he met with a chief to whom nothing was of such value as a handful of salt which he gave him. Dropping his hand by his side and finding something touching it, he looked round and saw the little children licking it to get a taste of what was to them the greatest of all luxuries.

This seemed to him a very pertinent illustration of the value of salt in districts where it was scarce, and an instance which should teach that, though there were inconveniences and difficulties attendant on this manufacture, it was one of such very great and vital importance that, whatever steps might be taken to compensate those who suffer, great care must be exercised that the salt manufacturing industry was not hampered or driven from the country.

The vote of thanks to Mr. WARD having been put and carried unanimously the Meeting then adjourned.

THE ANNUAL GENERAL MEETING,

Monday, May 27th, 1889.

ELIAS PITTS SQUAREY (PRESIDENT) in the Chair.

MESSRS. C. H. BEDELLS, G. J. BROWN, R. F. GRANTHAM, and P. E. PILDITCH having been requested to act as Scrutineers of the ballot for the Election of Council, the balloting list submitted by the Council in accordance with the By-Laws and the record of attendance of the Members of Council were read, and the ballot declared open.

The Report of the Council on the state of the Institution, and the Statement of Receipts and Expenditure for the year 1888, were read.

RESOLVED—"That the Report of the Council and the Balance Sheet be received and approved, and be printed and circulated with the 'Transactions.'"

RESOLVED—"That MESSRS. G. TAYLOR and A. VERNON be appointed Auditors for the ensuing year, and that the thanks of the Institution be given to Mr. G. TAYLOR, who has acted as sole Auditor during the past year."

RESOLVED—"That the thanks of the Institution are due and be given to the President, the Vice-Presidents, and the other Members and Associates of Council, for the able manner in which they have administered the affairs of the Institution."

RESOLVED—"That the thanks of the Institution be given to Mr. JOHN WORNHAM PENFOLD (the Honorary Secretary), to Mr. JULIAN C. ROGERS (the Secretary), and other officers of the Institution, for the able manner in which they have executed their several duties."

THE PRESIDENT presented the following prizes won by Candidates in the Professional Examinations, 1889:—

THE INSTITUTION PRIZE OF THE VALUE OF
£15 15s,

To JAMES MUIR, placed first in the Students' Proficiency Examination, 1889.

THE SPECIAL PRIZE OF THE VALUE OF £10 10s.

To WILLIAM COOPER DENDY, placed second in the Students' Proficiency Examination, 1889.

THE DRIVER PRIZE OF THE VALUE OF £15 15s.

To ARTHUR MACDONALD BROWN, placed first in the Examination (1889) for Non-Student Candidates for the Class of Professional Associates.

The ballot having been closed, the Scrutineers reported that the following gentlemen had been elected as

COUNCIL FOR THE ENSUING YEAR.

President.

ELIAS PITTS SQUAREY.

Vice-Presidents.

ROBERT COLLIER DRIVER	CHARLES JOHN SHOPPEE
FRANCIS VIGERS	THOMAS CHATFEILD CLARKE

Members of Council.

DANIEL WATNEY	ROBERT VIGERS
JAMES MARTIN	THOMAS MILLER RICKMAN
HENRY JAMES CASTLE	ROBERT GEORGE CLUTTON
ALEXANDER MILNE DUNLOP	JOHN SHAW
CHRISTOPHER OAKLEY	ARTHUR GARRARD
WILLIAM MATHEWS	

Professional Associate of Council.

EDWARD SMYTH

Associates of Council.

JOHN WOLFE BARRY

SIR RICHARD EVERARD WEBSTER, Q.C., M.P.

RESOLVED—"That the thanks of the Meeting be given to Messrs. C. H. BEDELLS, G. J. BROWN, R. F. GRANTHAM, and P. E. PILDITCH for their services as Scrutineers."

A vote of thanks to THE PRESIDENT for his conduct in the Chair having been passed unanimously, the Meeting separated.

THE TWENTY-FIRST ANNUAL REPORT OF THE COUNCIL.

Annual General Meeting, May 27th, 1889.

The Council have again the agreeable duty—a duty which has so often fallen to them—of reporting a year's progress of the most satisfactory description.

Since the date of the last Report there has been a large net addition to the number of Members, as will be seen by the following comparative statement:—

	Honorary Members.	Fellows.	Professional Associates.	Associates.	Students.	Total.
May 1889	14	896	334	89	110	1,443
May 1888	14	784	333	90	102	1,323
...		+ 112	+ 1	— 1	+ 8	+ 120

The increase of 112 in the Fellowship Class is accounted for by 98 elections and 28 transfers during the year, less 5 deaths, and 9 cessors of Membership from various causes.

There have been 40 Professional Associates elected during the same period ; on the other hand, 28 have passed out of this Class into that of Fellows, while 2 have died, and 9 have ceased to be Members.

The number of Associates is practically the same as last year.

There has been an addition of 44 Students during the year, representing, after deducting 1 who died, 5 who retired, and 29 whose studentship ceased by effluxion of time, a net increase of 8 in the Class.

Amongst the losses by death during the year the Council especially lament the decease of their valued friend and colleague Mr. E. N. CLIFTON, one of the Past-Presidents and Founder-Members of the Institution. His knowledge and his talents, always at the service of the Institution, were exerted to its great advantage on many important occasions during the last 20 years.

The Council have also to regret the loss of another eminent Member of the Institution (formerly a Vice-President), by the decease of Sir HENRY ARTHUR HUNT, C.B., one who united in himself the best traditions of the profession.

A few words only are necessary with reference to the financial position of the Institution. The amount received in subscriptions during the year 1888 shows a substantial increase as compared with the previous year. The other principal items of receipt, Hire of Arbitration Rooms and Dividends, also show an increase. Rent received, the only other considerable source of revenue, shows a slight decrease, resulting from the taking of the new house, 13A,

A summary of the Receipts and Expenditure for the year 1889, up to the present date, shows the following results:—

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
Total Revenue . .	3,176	3 10	Payments out of Revenue — Current		
Revenue Balance in hand, January 1st, 1889	26	7 6	Expenses	1,615	4 5
Entrance Fees . .	430	10 0	Examinations . . .	121	18 0
Interest	4	8 11	Purchase of £1,043		
Capital Balance in hand, Jan. 1st, 1889	155	12 1	Os. 6d. New 2½ per Cents.	1,000	0 0
			Revenue Balance in hand, May 27th, 1889	365	8 11
			Payments out of Capital — Furniture and Fittings . .	141	12 3
			Purchase of £516 2s. 7d. New 2½ per Cents.	500	0 0
			Capital Balance in hand, May 27th, 1889	48	18 9
	<u>£3,793</u>	<u>2 4</u>		<u>£3,793</u>	<u>2 4</u>

The Liabilities, at the present date, do not exceed £100.

During the year (May 1888-9) the sum of £579 has been paid in respect of works and alterations in connection with the Institution premises. The Council are under covenant to lay out £500 upon the new house. This amount has accordingly been expended on improvements, the additional £79 representing an instalment of the cost of remodelling the sanitary arrangements of the Institution, which it is estimated will cost a total sum of £200.

The Corporation Investments stand, at the present date, as follows:—£3,545 4s. 9d. in New 2½ per Cents. Stock, on Revenue Account; £539 11s. 2d. in the same Stock, on Library Account; £8,514 5s. 4d. in New 2½ per Cents., on

Capital Account; and £228 in North British Railway Preference Stock, on Account of the Crawter Bequest.

The Examinations continue to attract a large number of candidates. It has been found desirable to introduce some modifications into the *curriculum*. The subject of General Chemistry is now abandoned, Agricultural Chemistry, within certain well-defined limits, taking its place in the Land-Agency Section. The subject of Mensuration will, in future, form part of the Examination for the Valuation and Building candidates in both the Associateship Divisions.

At the Preliminary Examination in January last, 51 Candidates presented themselves, as against 48 Candidates in 1888. Of this number, 41 succeeded in passing, the number of successful Candidates last year being 39.

The first of a series of Preliminary Examinations in the Provinces was held at Manchester, contemporaneously with the London Examination, under the direction of the Provincial Committee for the District. The Council take this opportunity of tendering their thanks to the Chairman, Mr. CROSS, and to the Moderators, MESSRS. BRIDGFORD, DICKSON, HOLDEN, and WILSON, to whose arrangements the successful results were so largely due.

For the Professional Examinations held on the 8th to the 12th of April, 71 Candidates presented themselves, of whom 51 passed, and 20 failed, 1 Candidate retiring during the progress of the Examination.

The large number of Candidates rendered it necessary to secure the use of the Westminster Town Hall for these Examinations.

The following Table shows the comparative results of the Examinations for the nine years since their establishment :—

Years.	Preliminary Examinations.		Professional Examinations.	
	Candidates.	Passed.	Candidates.	Passed.
1881	13	6	2	1
1882	30	17	0	—
1883	44	22	25	22
1884	51	30	36	23
1885	46	37	43	31
1886	46	34	56	38
1887	53	39	58	45
1888	48	39	73	52
1889	51	41	71	51
TOTALS	382	265	364	263

Out of the 71 Candidates in the Professional Examinations of this year, 30 were drawn from the Metropolitan district, and 41 from the Provinces.

An analysis of the results shows that the 71 Candidates obtained an average of 57·76 per cent. of the possible marks, a result somewhat better than last year.

The 22 Student Candidates for the Professional Associateship obtained among them 12,883 out of a possible 22,000 marks, or 58·55 per cent.; the 39 non-Student Candidates for the Professional Associateship 26,344 out of a possible 44,700, or 58·93 per cent., and the 10 Fellowship Candidates 5,652 marks out of a possible 10,000, or 56·52 per cent.

The 26 Land-Agency Candidates obtained an aggregate of 16,071 marks out of a possible 28,200, or 56·99 per cent.; the 30 Valuation Candidates 19,049 out of a possible 32,700, or 58·25 per cent.; and the 15 Building Candidates 9,759 marks out of a possible 16,800, or 58·06 per cent.

The highest marks obtained by any Student Candidate

were 771 out of a possible 1,000 ; by any non-Student Candidate 950 out of a possible 1,200 ; and by any Fellowship Candidate 637 out of a possible 1,000.

The Institution Prize of the value of £15 15s. was won by a Student Candidate in the Land-Agency Section with 771 marks out of 1,000 : the Second Prize (£10 10s.) by a Student Candidate in the Valuation Division with 755 marks out of 1,000 : and the Driver Prize of the value of £15 15s. by a non-Student Candidate in the Land-Agency Section with 950 out of a possible 1,200.

The Institution is under the deepest obligations to those who have acted as Honorary Examiners, several of them gentlemen occupying high positions in the legal and scientific world.

The satisfactory results which have followed from the introduction of the system of Provincial Committees have led the Council to extend it to other districts, during the present year, by forming three new Committees—one for the county of Hants with South Wilts, of which Mr. BOVILL SMITH has been elected Chairman ; another for the grouped counties of Berks, Bucks, Oxon, and North Wilts, of which Mr. ARTHUR VERNON, of High Wycombe, has been elected Chairman ; and a third for the counties of Stafford and Derby, to the Chairmanship of which Mr. GILSON MARTIN has been elected.

There are now 10 of these Committees, including within their area 23 English counties.

Meetings have been held periodically in some of the new districts, for the discussion of Bills before Parliament and matters of local professional interest.

The Committees have been the means of adding largely

to the Membership of the Institution in the more populous centres, and will, no doubt, attract to its ranks any Surveyors of standing at present unconnected with it, before the Compulsory Examination comes into force.

There have been many excellent contributions during the year, both to the "Transactions" and to the "Professional Notes," and the discussions at the Ordinary General Meetings have been the means of eliciting a large amount of valuable information. The Council desire to thank those Members who have devoted so much time and ability in these directions to the service of the Institution.

It would be invidious to select any Paper by a Member for particular mention in the Report; but the Council feel it is due to a non-member, Mr. WARD of Northwich, to place on record their acknowledgments of his interesting and able contribution to the "Transactions," on the Salt Deposits of Cheshire, and the questions of damage to surface-owners connected with the working of those deposits.

The Council have carefully watched, and, where they could hope to do so with effect, have endeavoured to influence the course of several Bills in the two Houses of Parliament affecting interests with which the Profession is concerned. Some proposals which seemed most open to objection have been either withdrawn or rejected, but there still remains a residue which it is hoped the wisdom of Parliament will decline to place upon the Statute Book.

In conclusion, the Council record their sincere appreciation of the kindness extended to them during the year, and of the confidence which has been on all occasions reposed in them by the Members of the Institution.

RECEIPTS.				REVENUE		
	1888.			£	s.	d.
741	Fellows' Subscriptions for 1888, at £3 3s.	-	-	2,384	3	0
5	" " in advance for 1889, at £3 3s.	-	-	15	15	0
11	" " arrears at £3 3s.	-	-	84	13	0
2	" " part paid	-	-	2	2	0
				2,386 13 0		
368	Professional Associates' and Associates' Subscriptions for 1888, at £2 2s.	-	-	772	16	0
2	Professional Associates' Subscriptions in advance for 1889, at £2 2s.	-	-	4	4	0
12	Professional Associates' and Associates' Arrears at £2 2s.	-	-	25	4	0
				802 4 0		
95	Students' Subscriptions for 1888 at £1 1s.	-	-	96	12	0
2	" " in advance for 1889, at £1 1s.	-	-	2	2	0
1	" " in arrear	-	-	1	1	0
				99 15 0		
Hire of Arbitration Rooms				-	-	-
Rent received from No. 13A, Great George Street, to March, 1888				-	-	-
Dividends				-	-	-
Transferred from Capital				-	-	-
Cash at Bankers and in hands of Secretary, January 1st, 1888				-	-	-
				3,288 468 53		
				297 100 56		

£4,265

	£	s.	d.	£	s.	d.	£
64 New Fellows' Entrance Fees, at £5 5s.	-	-	-	386	0	0	
13 Fellows' Entrance Fees, Balance on Transfer, at £2 2s.	-	-	-	27	6	0	
				863 6 0			
34 New Professional Associates' and Associates' Entrance Fees, at £3 3s.	-	-	-	107	2	0	
				470 8 2			
Interest on £228 North British Railway Preference Stock (Crawter Bequest)				-	-	-	
Balance at Bankers, January 1st, 1888				-	-	-	
				278			

£757

	£	s.	d.	£	s.	d.	£
Donations to December 31st, 1888	-	-	-	-	-	-	
Dividends	-	-	-	-	-	-	
Balance at Bankers, January 1st, 1888	-	-	-	-	-	-	
				17 64			

£175

	£	s.	d.	£	s.	d.	£
Revenue Account	-	-	-	-	-	-	
Capital	-	-	-	-	-	-	
Library	-	-	-	-	-	-	
				4,265 757 175			

£5,198

	£	s.	d.	£	s.	d.	£
Cash at Bankers and in hands of Secretary	-	-	-	-	-	-	
Value of Furniture and Books	-	-	-	-	-	-	
Investments—2½ per Cents. Consols	-	-	-	4,084	15	11	
" New 2½ per Cents.	-	-	-	7,471	4	10	
" North British Railway Preference Stock (Crawter Bequest)	-	-	-	228	0	0	
				11,784 303 41			
Subscriptions and Entrance Fees due, but unpaid at date				-	-	-	
Fees for use of Rooms due, but unpaid at date				-	-	-	
Value of Premises, Nos. 12 & 13A, Great George Street				-	-	-	
				7,500			

£24,125

COUNT.

EXPENDITURE.

EXPENDITURE.										£	s.	d.	£	s.	d.
ce, Rates, and Taxes	-	-	-	-	-	-	-	-	-	973	15	5			
ght, and Water	-	-	-	-	-	-	-	-	-	175	17	3			
										87	4	10			
													686	17	6
ry, Postage, and Receipt Stamps, Books of Account, Publications, &c.	-	-	-	-	-	-	-	-	-	-	-	-	76	1	11
and Wages	-	-	-	-	-	-	-	-	-	-	-	-	211	4	6
old Effects, Housekeeper's Petty Cash Expenses, Tea, Coffee, and Sundry Disbursements	-	-	-	-	-	-	-	-	-	-	-	-	1,291	14	9
ations—Examiners' Fees	-	-	-	-	-	-	-	-	-	£95	17	6	140	10	5
Printing, Lithography, Hire of Instruments, and															
Sundry Disbursements	-	-	-	-	-	-	-	-	-	120	7	0			
													216	4	6
Less Candidates' Fees forfeited	-				£60	18	0								
and Sale of Examination Rules					12	5	0								
										73	8	0			
													143	1	6
Prizes	-	-	-	-	-	-	-	-	-	26	5	0			
ion of "Transactions"—Printing and Lithography	-	-	-	-	-	-	-	-	-	345	12	6	169	6	6
Covers and Binding	-	-	-	-	-	-	-	-	-	6	14	11			
Reporting	-	-	-	-	-	-	-	-	-	39	18	0			
										392	5	5			
Less Sale of "Transactions" and Covers	-	-	-	-	-	-	-	-	-	35	14	9			
ion of "Professional Notes"—Printing and Lithography	-	-	-	-	-	-	-	-	-	132	3	0	356	10	8
Less Sale of "Professional Notes"	-	-	-	-	-	-	-	-	-	7	5	6			
													124	17	6
e of £1,003 15s. 8d., 2½ per Cent. Consols	-	-	-	-	-	-	-	-	-	-	-	-	1,000	0	0
Printing	-	-	-	-	-	-	-	-	-	-	-	-	159	11	0
arges	-	-	-	-	-	-	-	-	-	-	-	-	32	8	7
Bankers and in hands of Secretary, December 31st, 1888	-	-	-	-	-	-	-	-	-	-	-	-	66	7	6
													£4,265	10	10

COUNT.

	£	s.	d.
of Furniture and Fittings - - - - -	49	2	9
ons to new Premises, 13A, Great George Street - - - - -	453	0	0
ferred to Revenue - - - - -	100	0	0
at Bankers, December 31st, 1888 - - - - -	155	12	1
	£757	14	10

COUNT.

	<i>£</i>	<i>s.</i>	<i>d.</i>
Purchase of Books, Maps, &c.	-	-	6
Balances at Bankers, December 31st, 1888	-	-	2
	<i>£</i> 175	12	8

R Y.

	<i>£</i>	<i>s.</i>	<i>d.</i>
" " " " " "	4,199	8	4
" " " " " "	602	2	9
" " " " " "	90	11	6
at Bankers and in hands of Secretary, December 31st, 1888	807	0	9
	<i>£</i> 5,198	18	4

BILITIES.

	£	s.	d.
Quarter's Rent to Christmas 1888 -	-	-	96
Housekeeping, Printing, and various Accounts -	-	-	891
	-	-	23,687

APPENDIX TO VOL. XXI.

Obituary.

CHARLES NORMAN BAZALGETTE (Associate) was the second son of Sir JOSEPH BAZALGETTE, the well-known engineer. He was educated at Magdalen College, Oxford, taking the degree of B.A. in 1871, and that of M.A. in 1874, and was called to the Bar the same year. From a very early point in his professional career, he held a large number of briefs as Junior Counsel in connection with Bills before Select Committees of the Lords and Commons, and with Local Government inquiries under the Public Health Act (1875), a class of cases in which his technical knowledge of engineering gave special value to his advocacy.

Mr. BAZALGETTE was a somewhat voluminous writer. He contributed a valuable article on "Abattoirs" to the *Encyclopædia Britannica*, and, in connection with Mr. GEORGE HUMPHREYS, published a well-known legal text-book on "Local and Municipal Government." Not long before his death he collaborated with the same gentleman in the production of a text-book on the "Law relating to County Councils."

Mr. BAZALGETTE was endowed with the pen of a ready writer, and among his contributions to current topics of interest, in the form of papers in the Transactions of Professional Societies, may be cited a remarkable one on the

sewage question read, in February 1877, before the Institute of Civil Engineers, and a paper on "County Boards," contributed to the "Transactions" of The Surveyors' Institution in 1878.

Some years ago Mr. BAZALGETTE was a rather frequent attendant at the Meetings of this Institution, of which he became an Associate in 1876, maintaining his connection with it to the time of his death.

With agreeable manners, excellent natural powers, great industry, and (for so young a man) a remarkably varied experience, there seemed, humanly speaking, a distinguished career before him—an expectation unhappily cut short by his premature death, which occurred on Monday, the 17th of December last.

EDWARD NORTON CLIFTON (Past-President) was born on May 24th, 1817. He was the third and last surviving son of the late Mr. NATHANIEL CLIFTON, of Cross Street, Islington. He was born in Islington, and educated at the Charterhouse School as a day boarder under the late Dr. RUSSELL, leaving it in 1834 to commence his professional career as an articled pupil in the office of the late HENRY WILLIAM INWOOD, in Southampton Place, Euston Square. At the termination of his articles in 1837, he remained with Mr. INWOOD, until, at the age of twenty, and in this year, as joint architect with Mr. INWOOD, he carried out the works in connection with the erection of St. James's Church and St. Stephen's Church, Islington. About this time he was seized with a severe attack of smallpox which incapacitated him for some time from business. On his recovery in the following year (being then twenty-one years of age), he commenced independent practice as an architect and surveyor in Tokenhouse Yard, in the City of London, and about the same time obtained

the appointment of District Surveyor of Bethnal Green, at that time one of the largest districts in the Metropolis (it has been since divided into two districts). From this date his practice steadily increased, and in 1845 (the railway year), and subsequent years during the railway mania, he made surveys and valuations for various lines of railway. From this time his successful career may be said to have commenced, and he became rapidly known as an architect and surveyor. About the year 1850 he carried out a large and important work in the building of the Royal Medical Benevolent College, Epsom, founded by the late JOHN PROPERT, whose eldest daughter he married two years afterwards. At the same time he removed his offices to his private residence in Russell Place, Fitzroy Square, W. His City practice, however, rapidly increasing, he found it necessary to return to the City, and took temporary offices in the old Excise Office, Old Broad Street. Having at this time become associated with the late Sir (then Mr.) WILLIAM TITE, he carried out the negotiations for the purchase of that property, of which he was appointed Architect. The large new building now known as Gresham House was carried out by him. It covers over an acre of land, and has proved a very successful speculation. During his connection with Sir WILLIAM TITE he removed his offices to St. Helen's Place, Bishopsgate Street, into the house where Sir WILLIAM TITE carried on his practice. Soon after this the Old East India House in Leadenhall Street was for sale, and he was empowered by a syndicate to negotiate with the Government for its purchase, which he carried into effect. The old premises were then demolished, and the present buildings, known as the East India House Estate Company, were erected, Mr. CLIFTON being retained as Architect. These buildings cover over an acre and a quarter of land. For many years he held the appointment of Sur-

veyor to the Liverpool and London and Globe Insurance Company, the London and Westminster Bank, the Worshipful Company of Tallow Chandlers, the London and Blackwall Railway Company, the East London Railway Company, the London and South-Western Railway Company, the Governors of the Charities of St. Dunstan in the East, also the Parish of St. Dunstan in the East, and other smaller appointments. About the year 1875 he was appointed Architect to the Holborn Viaduct Land Company, which was formed for building upon the lands the property of the Corporation of the City of London on the Viaduct, in Farringdon Road, Charterhouse Street, Shoe Lane, and Snow Hill. The whole of this important area, embracing between three and four acres of land, is now covered with buildings. He was very largely engaged in arbitrations, valuations, and compensation cases, and in purchasing properties connected with the leading railway companies, waterways, and for various improvements made by Her Majesty's Office of Works, the Metropolitan Board of Works, Commissioners of Sewers, Corporation of London, School Board for London, H.M. Post Office, and other public bodies and institutions. He was a Fellow of the Royal Institute of British Architects, a Past-President of the Surveyors' Institution, and a Member of the Institution of Civil Engineers. He was frequently appointed as umpire in large and important valuation cases, and his opinion in light-and-air cases, and questions relating to the Building Act, was in continual request. During the last fifteen years he had been a great sufferer from chronic asthma, brought on, and in a great measure due to, an accident he met with while riding in Hyde Park in 1874. Some years ago he took into partnership his eldest son, WILLIAM EDWARD, and Mr. WILLIAM ELLIOT HOPE, who for upwards of thirty years had been associated with him in his profession, the

name of the firm being E. N. CLIFTON, SON, & HOPE, of 7, East India Avenue, Leadenhall Street, E.C.

Among the various buildings erected by Mr. E. N. CLIFTON, those of the greatest importance are, the Royal Medical Benevolent College, Epsom; Gresham House, Old Broad Street; the building of the East India House Estate Company, Leadenhall and Lime Streets; the London Dock House, Leadenhall Street; Messrs. MANN, CROSSMAN, & Co.'s Brewery, Mile End; the National Bank, Old Broad Street; Alliance Bank, Borough; additions to the London and Westminster Bank, Lothbury; New Branches for the same at Lambeth, Whitechapel, and Southwark; the Swan with Two Necks, and Messrs. T. TAPLING & Co.'s vast expanse of buildings in Gresham Street; the City of London Fire Insurance Company (late Great Britain); additions to the Atlas Insurance Co.'s premises; buildings of the Bishops-gate Schools, Skinner Street; Middle Class Schools, Cowper Street, E.C.; the City and Guilds of London Technical College, Finsbury; Holborn Viaduct Land Co., 147 and 148, Leadenhall Street; Moffatt's, 27 and 28, Fenchurch Street; 21 and 22, Leadenhall Street; 6 and 7, 11, 12, and 13, Great Tower Street; 16 and 18, Mincing Lane, and 85 and 86, Great Tower Street; 59, Knightrider Street, and 46, Parliament Street; the large block of buildings comprising Norfolk Terrace, Bayswater, and also a large block of buildings in Westbourne Grove, and various alterations and additions to houses in the West End, and numerous other commercial buildings in the City of London and elsewhere, including several warehouses and wharves.

Amongst the various works carried out by Mr. CLIFTON in the country, may be mentioned numerous railway stations on the Yeovil and Exeter Branch of the London and South-Western Railway, St. Dunstan's College, Catford Bridge, Kent; Schools and Chapel at Plaistow, Essex; the Imperial

Hotel, Torquay; Clayton Court, Liss, Hants; also a large block of buildings comprising one side of London Street, Folkestone, and residences in various parts of the country.*

Mr. CLIFTON's connection with The Surveyors' Institution was of the most close and cordial description. He took an active part in the preliminary work of its foundation, and throughout its career exercised a powerful and salutary influence over its policy and aims. He was a Member of its first Council, and four years after its foundation became President in succession to the late Mr. RICHARD HALL, serving the office for the two years 1872-73 and 1873-74.

In his first Opening Address, delivered on the 11th of November, 1872, he was able to point with satisfaction to the progress made by the Institution, even in those early days, and to prophesy for it a career which has been more than fulfilled in its subsequent history. In one respect only are his aspirations to some extent still unrealised. He did not hesitate to say that the reproach of want of professional organisation would not be entirely removed until the certificate of the Institution became as indispensable to a surveyor as the diploma of the College of Surgeons to a medical man, or that of the Inns of Court to a barrister; though the time is approaching when even this state of things will come within virtual attainment. This first Address dealt with a great variety of topics, all touched with a masterly hand; but its principal present interest consists in the following passage, in which he foreshadows, nine years before its actual inception, the extensive examination system now in operation. He says:—"There is one other subject to which I wish, in conclusion and very briefly, to refer, and I do so because I look upon it as having a most important bearing upon the future, not only of this Society, but of the profession at large. At the end of our List of Members, you will

* Reprinted to this point from the "Land Agents' Record."

“ find the names of a few gentlemen who have entered
 “ themselves as Students of the Institution. The certificate
 “ which they have received as such cannot fail to be of
 “ great service to them in their after career, as affording
 “ a proof that from their earliest professional years, their
 “ progress has been through avenues where they are likely
 “ to become fitted for the work of later life. Is there any
 “ reason why the class of Students should not become the
 “ principal source from which the ranks of membership are
 “ recruited? I think not, and I venture to appeal to
 “ Members, who have sons training to become surveyors,
 “ and articulated pupils whom they are fitting for future
 “ usefulness, to cause them to enrol their names in the
 “ Society’s books. By associating, in this way, the rising
 “ generation of surveyors with the Institution so closely
 “ identified with its professional interests, we shall gain the
 “ double advantage of placing the Society upon a true basis
 “ of permanency, and of establishing such a link between
 “ the present and the future of our calling as may enable
 “ us, at no very distant day, to provide means, by examina-
 “ tions or in some other way, for the educational ends, which
 “ I hold to be one of the most useful functions of a Society
 “ such as ours.”

It is needless, after this, to say that he took the greatest
 interest in the development of the Examination System,
 serving continuously on the Professional Education Committee
 from its first appointment in 1880.

He was also a strenuous advocate for the establishment
 of Provincial Committees. A large and generous policy
 was certain at any time to command his support, and his
 advice, though seldom offered unsolicited, was always available
 when needed, and never failed to be dispassionate and sound.

With great natural abilities he united business aptitudes
 of a rare order, and a power of educing working theories out

of involved data which gave a certain oracular cast to his utterances and inspired confidence in his discernment.

He has left his mark upon the history of the Institution, and its Members will not easily find a representative of his type to fill his place in its counsels.

JAMES FARRAR (Fellow) was born at Bury, in Lancashire, on the 20th of November, 1825.

He is believed to have been a pupil of the late Mr. **SAMUEL HUNT**, who was in considerable practice as a Surveyor and Valuer at Stockport, about forty years ago.

Mr. **FARRAR** was in large practice at Bury for nearly forty years, being well known there and in many other parts of the country as a Surveyor and Valuer. He was largely employed as an Engineering Surveyor, designing and carrying out a number of important sanitary, drainage, and water works in many parts of the country.

He was a Member of the Institute of Civil Engineers, and a Magistrate for the borough of Bury.

For some time before his death he suffered from a severe bronchial affection, which occasionally incapacitated him from business. This complaint was latterly complicated with other serious ailments.

He died on the 18th of April, 1889, and was interred in the Bury Cemetery on the 22nd of that month.

GEORGE EDOUARD GILLET (Honorary Member) was, at the time of his death, President of the Comité Centrale des Géomètres de France; a distinction to which he succeeded in 1879, on the retirement of M. **LEFÈVRE DE SUCY**, a former Honorary Member of this Institution.

M. **GILLET** was distinguished for his scientific attainments, particularly as a forester, following in this respect

his father's special branch of practice. In addition to his ordinary avocations he, like most busy men, found time for an immense amount of that class of unpaid labour which falls to the lot of eminent citizens in all countries, having been Mayor of Joinville, as well as occupying other civil offices.

M. GILLET was the author of two works of very considerable scientific value, one entitled "*Nouvelle Méthode pour Procéder aux Abornements Généraux*"; the other, a treatise on Trigonometry. He was also a recognised authority on the mechanism and adjustment of scientific instruments.

By his death, which took place at Joinville on the 8th of August last, the surveyors of France have lost a representative entirely devoted to the interests of the profession of which he was the acknowledged head.

JOHN STERLAND GRATTON (Fellow) was born at Chesterfield on the 1st September, 1835, and died at his residence, Timberfield Park, Stretton, near Clay Cross, Derbyshire, on the 24th October, 1888.

He was the son of Mr. RICHARD GRATTON, Solicitor, of Chesterfield, and was a direct descendant of the fearless Quaker preacher, JOHN GRATTON, of Monyash, Derbyshire, who lived about the middle of the 17th century, and with whom the Right Hon. JOHN BRIGHT claimed a collateral descent.

He was articled in the year 1851 to Mr. RICHARD BAYLISS, C.E., the then Surveyor and Land-Agent to the Midland Railway Company, whom he succeeded on his retirement in the year 1858.

In the year 1861, in addition to his duties as Surveyor and Land-Agent, he was appointed Secretary to the Way and Works Committee, and continued to act in that capacity until the day of his death. He also acted as Secretary to several other Committees for lines jointly owned with other Companies.

It may be stated that in the course of the 30 years during which Mr. GRATTON was Surveyor and Land-Agent to the Company, the mileage of the railway increased from 566 miles to 1,268 miles, and the capital of the Company from £22,000,000 to £36,000,000, and that during the last ten years of his life he purchased nearly all the land required by the Company for their extensions: the value of such purchases alone exceeded £3,500,000.

In addition to his other duties, he had, as Land-Agent to the Company, about 16,000 tenancies under his supervision.

His death ensued upon typhoid fever, supposed to have been contracted during one night's sojourn at Tangiers, while away on his summer holiday.

SIR HENRY ARTHUR HUNT, C.B. (Fellow) was born at Westminster, in September 1810. He served his articles with Messrs. THURSTON, subsequently entering the office of Mr. WALLEN, who took him into partnership when under eighteen years of age. On the dissolution of this partnership in 1828, Mr. HUNT commenced business on his own account.

Some fifteen years later he took the late Mr. CHARLES STEPHENSON into partnership, and the two carried on the business for a considerable period, until Mr. HARRY JONES entered the firm, which from that time became known as the firm of HUNT, STEPHENSON, & JONES, of Parliament Street, Westminster.

Mr. HUNT in early life made, single-handed, for Sir CHARLES BARRY, the detailed estimate for the Houses of Parliament. When the great railway companies were constructing their lines he was largely employed by the North Staffordshire, the London Brighton and South Coast, the Eastern Counties, the District, and the Metropolitan rail-

ways. Most of the principal railway factories at Stratford were built under his supervision. He also constructed the gigantic brewery of Messrs. ALLSOPP, at Burton-on-Trent.

Throughout the country, and especially in the north of England, he was constantly employed as an Arbitrator in connection with compensation claims, and in the south, during the latter years of his life, in adjudicating on claims under the Artizans' and Labourers' Dwellings Acts.

Among the many building estates which he managed may be mentioned those of the Commissioners of the Exhibition of 1851, at South Kensington; those of the Corporation of the Sons of the Clergy; and the property belonging to the Dean and Chapter of Westminster, till transferred to the Ecclesiastical Commissioners. He also held the important post of Consulting Surveyor to Her Majesty's Office of Works, from 1856 to 1886, and in this capacity was largely concerned in the selection of the site for, and the erection of, the Royal Courts of Justice. In 1871 he was made a C.B., under Mr. GLADSTONE's administration, and was knighted, in 1876, by the Conservative Government then in office.

Sir HENRY was a Fellow and a Founder Member of the Surveyors' Institution, and was one of its Vice-Presidents for the two years 1868-1870. He was also an Associate of the Institute of Civil Engineers.

The last arbitration case in which he was engaged was in connection with the celebrated Thirlmere scheme. It will be remembered that the whole of the evidence in this case was heard by him, but he afterwards became so unwell that he found it impossible to make the award, upon which it was decided between the parties to appoint another umpire to make the award upon the evidence contained in the shorthand writers' notes, and under this arrangement Mr. JOHN CLUTTON settled the matter.

Few men owe their success in life less to chance than did the subject of this memoir. He was naturally gifted with a capacity for hard work, and was indefatigable in the pursuit of any object upon which he had set his mind. He was an early riser throughout his life, being seldom in bed after 6 o'clock in the morning. Most of his personal characteristics will be fresh in the memory of all. Perhaps the most noticeable of these was his extreme brevity and dryness of speech in connection with matters of business, though it is said that he was an excellent and entertaining talker in private and in congenial company.

He was particularly exact in all he did, bestowing upon it a continuous and concentrated attention of which few men are capable. It was this quality, joined with a wide range of practical knowledge, which made him so acceptable as an Arbitrator. He would listen with admirable gravity and patience to the most illogical arguments and the most contradictory statements without betraying his opinion of them either by look or gesture. Never was manner more inscrutable. He took very brief notes, being gifted with a most retentive memory, and almost invariably making his awards while the matter and the evidence were fresh in his mind.

During the last three or four years of his life, his health, which had previously been uniformly good, became visibly impaired, though he remained in perfect possession of his faculties to the end. His death took place at Folkestone, on Sunday, January 13th, 1889, in the 78th year of his age.

JOHN WARRINGTON MORRIS (Fellow) was born on July 27th, 1828. He came of a family of architects and surveyors, his grandfather and his father being both members of that profession. He was for some time in partnership with the latter, and took over his business on his decease.

Mr. MORRIS, was architect to many considerable build-

ings, amongst the most important of them being the Church of St. Michael and all Angels, Bromley, 1865 ; the Parsonage and Schools, Bromley, 1866 ; Apton Hall, Essex, a chapel at West Ham, 1874 ; Poplar Union Workhouse, 1872 ; and a chapel at Rotherhithe, 1859 ; he was also (conjointly with Mr. WARBURTON STENT) Architect for the Metropolitan Hotel and Gracechurch Chambers, City.

Mr. MORRIS was well known as an expert rating surveyor, among the chief valuations made by him in recent years being those for the rating of the West India Docks, the London and St. Katharine Docks, the Albert and Victoria Docks, and the King's Lynn Docks ; the London and North Western Railway Stations and Works, &c., at London, Birmingham, Liverpool, Huddersfield, Crewe, Lancaster, &c. ; the East London Waterworks, the Nuneaton and other gasworks.

He was for many years Rating Surveyor to the parishes of St. Dionis, Backchurch, and West Ham ; in the latter parish his practice extended to the valuation of some of the most important factories, &c., in the kingdom.

He was, in conjunction with Mr. BRACEBRIDGE and others, Rating Surveyor for the parish of All Saints, Poplar ; also for the parish of St. Leonard's, Bromley.

Mr. MORRIS died on the 18th April, 1888, after a few days' illness, brought on by the strain of overwork. He was highly respected and esteemed, his personal geniality of character winning him many friends.

ROBERT LITTLE MURRAY (Fellow), Land-Agent and Surveyor, of the firm of SMITH, GOTTHARDT & Co., was a native of Keighley, and learned his profession with Messrs. SMITH & GOTTHARDT, with whom he had been connected for about twenty-eight years. Within the last few years he had been made a partner in the firm.

Mr. MURRAY was Secretary of the Bradford Society of Architects and Surveyors. He died at Bradford on Sunday, 7th July, from an acute attack of pleuro-pneumonia, in the 42nd year of his age.

CONRAD JOSEPH SHOPPEE (Professional Associate) was the second surviving son of Mr. CHARLES JOHN SHOPPEE (Vice-President), and was educated at Charterhouse and at the Royal Agricultural College, Cirencester. He was an articled pupil of Messrs. DANIEL SMITH, SON, and OAKLEY, of 10, Waterloo Place, Pall Mall, afterwards with Messrs. SEDGWICK, SON, & WEALL, of Watford. After practising for a year or two in London, the deceased went to Dunedin, in New Zealand, where he carried on business for five years.

On returning to England he resided at Hertford, practising there as a land and timber surveyor. Preferring Australia to England, he sailed in the ship *Helena Mena* for Fremantle in July 1888, and in the tropics had an attack of typhoid or "ship's" fever, from which he died on the 3rd September, 1888, after only two days' illness.

GODFREY WAKEFIELD (Fellow) was born on the 6th of April, 1854, and was educated at the Medical College, Epsom. In 1870 he entered, as a pupil, the office of Messrs. CASTLE & SON, of 40, Chancery Lane, and was made a partner of the firm in 1877.

Mr. WAKEFIELD was elected an Associate of the Institution in March 1879, and was transferred to the Class of Fellows in November 1887. His death took place on the 10th of March, 1889, in the 35th year of his age.

WILLIAM WILLIAMS (Fellow) was born at Chester on the 8th of August, 1837, and was articled to Messrs.

TOWNSHEND & BARKER of that city. In 1866 he removed to Oswestry (where he afterwards carried on business), and was appointed to Sir EDMUND BUCKLEY's agency at Dinas-Mowddwy, in 1872, when he again removed to Borth. In October 1886 Mr. WILLIAMS took up his residence in Lancashire, having been appointed Manager of Messrs. RICHARD EVANS & COMPANY's Colliery at Haydock.

His death took place in April last, in the 51st year of his age.

LIST OF DONATIONS AND CONTRIBUTIONS
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DONATIONS OF BOOKS, MAPS, &c.

DONORS.	TITLE OF WORK.
Agent-General for New South Wales . . .	{ "Blue Books relating to Public Works and Improvements in New South Wales."
<i>Agricultural Gazette</i> , Editor of the . . .	{ "The Agricultural Gazette," 1888-89.
<i>Architect</i> , Editor of the . . .	{ "The Architect," 1888-89.
Association of Lands Valuation Assessors for Scotland . . .	{ "Proceedings," 1888-89.
Austin, R., Junr. . . .	{ "History and Law of the Foreshore and Seashore." By S. A. Moor and R. G. Hall.
Bath and West of England Society . . .	{ "Journal," 1888-89.
<i>British Architect</i> , Editor of the . . .	{ "The British Architect," 1888-89.
<i>Builder</i> , Editor of the . . .	{ "The Builder," 1888-89.
<i>Builder's Weekly Reporter</i> , Editor of the . . .	{ "The Builder's Weekly Reporter," 1888-89.
<i>Building News</i> , Editor of the . . .	{ "The Building News," 1888-89.
Carter, A. P. . . .	{ Marshall's "Rural Economy of Yorkshire," 1788, 2 vols.
Castle, H. J., Senr. . . .	{ "Practical Remarks on the Principles of Rating, &c., 1869." By H. J. Castle, Senr.
Clifton, W. E. . . .	{ A framed ($\frac{3}{4}$ life size) Portrait of the late Mr. E. N. Clifton (Past-President of the Institution).
<i>Contract Journal</i> , Editor of the . . .	{ "The Contract Journal," 1888-89.
Curtis, C. E. . . .	{ Treatise on "Estate Management." By C. E. Curtis. 3rd edition.
Daw, W. H. . . .	{ Treatise on "Town Holdings." By W. H. Daw.
<i>Estates Gazette</i> , Editor of the . . .	{ "The Estates Gazette," 1888-89.

DONORS.	TITLE OF WORK.
Evans, R.	{ "Records of the Borough of Nottingham," vol. 3, 1485-1547.
Farmers' Club	{ "Journal," 1888-89.
<i>Field</i> , Editor of the . . .	{ "The Field," 1888-89.
Fream, Dr. W.	{ Treatise, entitled, "Agricultural Canada: a Record of Progress." By Dr. Fream.
Gray, J.	{ "Town Holdings: a Digest of Evidence as to England and Wales, given before the Select Committees, 1886, 1887, and 1888; and Statement as to Leasehold Enfranchisement and Taxation of Ground Rents and Building Land."
Gray, C. G.	{ A large number of Mathematical and Scientific Treatises.
	{ Donaldson's "Agricultural Biography."
	{ Wakefield's "Ireland," 2 vols., 1812.
	{ Mill's History of British India," 1817.
Haywood, Lieut.-Col. W. .	{ Reports on Works executed by the Hon. the Commissioners of Sewers, 1888.
Hedges, K.	{ Treatise on "Central Station Electric Lighting." By K. Hedges.
<i>Horticulture, Journal of</i> , Editor of the	{ "The Journal of Horticulture," 1888-89.
Institution of Civil Engineers	{ "Proceedings," 1888-89.
Institution of Civil Engineers of Ireland	{ "Transactions," 1888.
Institution of Mechanical Engineers	{ "Proceedings," 1888-89.
<i>Iron</i> , Editor of	{ "Iron," 1888-89.
Kinch, Professor E. . . .	{ Reports on Field Experiments, 1888. By Professor E. Kinch.
<i>Land and Water</i> , Editor of <i>Land Agent's Record</i> , Editor of the	{ "Land and Water," 1888-89.
	{ "The Land-Agent's Record," 1888-89.
Marsland, E.	{ "Rules and Regulations affecting Building Operations in the Metropolitan Area," By E. Marsland.
<i>Metropolitan</i> , Editor of the	{ "The Metropolitan," 1888-89.
Middleton, R. E.	{ "Triangulation and Measurements of the Forth Bridge." By R. E. Middleton.
Minister of Public Works of Rome	{ "Journal of the Civil Engineers of Rome," 1888-89.
Moore, H. E.	{ "Notes on Agricultural Law." By H. E. Moore.
National Association of British and Irish Millers.	{ Ninth and Tenth Annual Reports of the National Association of British and Irish Millers.
North of England Institute of Mining and Mechanical Engineers	{ "Transactions," 1888-89.
Pilditch, P. E.	{ "Fuller's Worthies," 2 vols., 1811.

DONORS.	TITLE OF WORK.
Rickman, T. M.	{ "Horse-hoeing Husbandry." Original Edition, 1733. By J. Tull. -----
Ryde, W. C.	{ "Text-Book on the Local Government Act." By W. C. Ryde and E. L. Thomas.
Royal Agricultural Society of England	{ "Journal," 1888-89.
Royal Engineers' Society	{ Professional Papers of the Corps of Royal Engineers, 1887.
Royal Institute of British Architects	{ "Journal of Proceedings," 1888-89.
Royal Statistical Society	{ "Transactions," vol. 4 (New Series).
Sample T.	{ "Journal," 1888-89.
Sanitary Institute of Great Britain	{ The first Levelling Staff used in England.
Secretary of State for India	{ "Transactions," 1888-89.
Shropshire Land Agents' Society	{ "An Account of the Operations of the Great Trigonometrical Survey of India," vol. 10.
Société des Géomètres of France	{ "Proceedings," 1888-89.
Society of Architects	{ "Journal," 1888-89.
Society of Engineers	{ "Proceedings," 1888-89.
Thomson, W. C.	{ "Transactions," 1887.
Usher, A.	{ Davidson's "History of Alnwick," 1822.
Usill, G. W.	{ Map of British Honduras. By A. Usher.
Wallace, Professor R.	{ "Text-Book on Practical Surveying." By G. W. Usill.
Watts, A.	{ "India in 1887." By R. Wallace.
Whalley, F. H.	{ Prize Manual on "Dairy Farming in Devonshire." By A. Watts.
Whalley, H. S.	{ Wodderspoon's "Memorials of the Town of Ipswich," 1850, and Rastall's "History of Southwell," 1787.
Williams, S. W.	{ Field's "History of Warwick," 1815.
Wheeler, W. H.	{ "Further Excavations at Strata Florida Abbey," and "The History of the Cistercian Abbey of Strata Florida." By S. W. Williams.
	{ Treatise on the "Drainage of Fens and Low Lands." By W. H. Wheeler.

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THE SURVEYORS' INSTITUTION

(INCORPORATED BY ROYAL CHARTER),

12, GREAT GEORGE STREET, WESTMINSTER, S.W.

LIST OF MEMBERS, JULY 1st, 1889.

*Date of Election
and of Transfer.*

Honorary Members.

1874, Apr. 13	BEDFORD, HIS GRACE THE DUKE OF	81 & 82, Eaton Square, S.W.
1878, Nov. 11	BUCAILLE, EUGÈNE	168, Boulevard de Strasbourg, Havre, France.
1875, Mar. 15	CAIRD, SIR JAMES, K.C.B. . .	Land Office for England, St. James's Square, S.W.
1877, Jan. 15	CONSTABLE, JOHN, The REV. . .	Marston Bigot, Frome, Somersetshire.
1886, Jan. 11	CULLEY, GEORGE	{ Office of Woods, Forests, and Land Revenues, 1, Whitehall Place, S.W.
1871, Jan. 30	GORE, CHARLES ALEXANDER, The HONORABLE	{ West Side, Wimbledon Common, S.W.
A. '81, Mar. 21 } H.M. '86, Mar. 8 }	GRANTHAM, SIR WILLIAM . . .	82, St. George's Square, S.W.
1880, May 10	HAMPDEN, THE RIGHT HON. LORD VISCOUNT	{ Glynde, Lewes, Sussex.
1833, May 21	HARTINGTON, THE RIGHT HON. THE MARQUIS OF	{ Devonshire House, Piccadilly, W.
1889, Mar. 4	JERSEY, THE RIGHT HON. THE EARL OF	{ 3, Great Stanhope Street, W.
1886, Jan. 11	KINGSCOTE. COLONEL ROBERT NIGEL FITZHARDINGE, C.B. . .	{ Office of Woods, Forests, and Land Revenues, 1, Whitehall Place, S.W.
A. '69, Jul. 26 } H.M. '71, Feb. 27 }	LEACH, GEORGE ARCHIBALD, LIEUT.-COLONEL	{ Land Office for England, St. James's Square, S.W.
1887, Jan. 24	LYTTELTON, THE RIGHT HON. LORD	{ Hagley Hall, Stourbridge.
1885, Apr. 20	M'CLELLAN, JOHN B., M.A., The REV.	{ Royal Agricultural College, Cirencester.

Fellows.

*Date of Election
and of Transfer.*

The names of those Fellows who have qualified for the Class by Examination are distinguished thus *

Diploma
Number.

559	1889, Jan. 28	ABBEX, JOE BURMAN. . . .	28, John William Street, Huddersfield.
1084	1884, Jan. 14	ABBOTT, ROBERT THOMAS G. .	Quarry Cottage, Norton, Malton, Yorkshire.
499	1888, Nov. 26	ABBOTT, WILLIAM	Holbeach, Lincoln.

Dip No.	Date of Election and of Transfer.	FELLOWS.	
1	1868, Jun. 15	ADAMS, CHARLES FREDERICK	Barkway, Herts, and 57, Coleman Street, E.C.
1105	1884, Feb. 25	ADAMS, HENRY	60, Queen Victoria Street, E.C.
1504	1888, Dec. 10	ADDIE, PETER	30, Winckley Square, Preston.
612	1881, Feb. 21	ADDIE, WILLIAM FORRESTER	{ Powis Castle Estate Office, Welchpool, Mon. gomeryshire.
664 {	{ A. '81, Dec. 19 } F. '86, Dec. 8 }	ADKIN, CHARLES DUNCAN	Wantage, Berks.
1479	1888, Apr. 30	ALLEN, GEORGE	Estate Offices, Stalbridge, Dorset.
982	1883, Dec. 17	ALLEN, HENRY ROBERT	50, Finsbury Square, E.C.
597 {	{ A. '81, Jan. 10 } F. '84, Mar. 10 }	ANDERSON, ROBERT, JUN.	The Barton, Cirencester.
287	1872, Dec. 9	APPERLEY, WILLIAM HAVARD	Hereford.
1279 {	{ A. '85, Dec. 7 } F. '87, Dec. 5 }	*ARCH, ARTHUR JOSEPH EDWIN.	{ Punjoin and Sunghie Dua Samantan Mini Company, Pahang, Singapore.
198	1869, May 3	ARDING, CHARLES BENNETT.	22, Surrey Street, Strand, W.C.
1133	1884, Apr. 21	ARMISTEAD, RICHARD	118, Main Street, Bingley.
791	1882, Apr. 24	ARMSTRONG, THOMAS JOHN	14, Hawthorn Terrace, Newcastle-on-Tyne.
1505	1888, Dec. 10	ARNOLD, FRANCIS	Hambledon, Hants.
1541	1889, Jan. 14	ASHDOWN, AUGUSTUS HARDING	Talbot Chambers, Shrewsbury.
1624	1889, May 18	ATKINS, SYDNEY GEORGE	The Hall, Coston, Wymondham, Norfolk.
404	1875, Nov. 8	AUSTIN, RUSSELL GARDENER	Hertford.
140 {	{ A. '68, Nov. 2 } F. '87, Feb. 7 }	BADCOCK, PHILIP	9, Whitehall Place, S.W.
1506	1888, Dec. 10	BAINBRIDGE, ROBERT STAGG	Keverstone, near Staindrop, Durham.
1005 {	{ A. '83, Dec. 17 } F. '84, Dec. 8 }	BAIRD, JONATHAN PEEL	Estate Office, Somerley, Ringwood, Hants.
812	1882, May 22	BALLARD, EDMUND	Elwick House, Ashford, Kent.
479	1877, Mar. 12	BALLS, JAMES MAYHEW	Castle Hedingham, Essex.
1560	1889, Jan. 28	BANCROFT, HENRY	83, Moseley Street, Manchester.
606	1881, Feb. 7	BANNISTER, THOMAS	Limehurst, Hayward's Heath, Sussex.
712	1882, Jan. 30	BARFIELD, FREDERIC HENRY	56, Lancaster Road, Stroud Green, N.
259	1885, Mar. 9	BARKER, CALEB	Estate Office, Shadwell, Thetford.
983	1888, Dec. 17	BARNES, JOHN WILLIAM JAMES	Brougham Chambers, Wheeler Gate, Nottingham.
1307	1886, Feb. 22	BARNES-WILLIAMS, THOMAS	11, Clement's Lane, E.C.
118	1868, Aug. 17	BARRY, CHARLES	1, Victoria Street, S.W.
1056	1884, Jan. 28	BATE, THOMAS	The Red Tower, Kilburn, N.W.
726	1882, Feb. 13	BATH, FRED	Crown Chambers, Salisbury, Wilts.
1968	1887, Feb. 7	BATTAM, FREDERICK THOMAS	28, Mount Street, Grosvenor Square, W.
1580	1889, Feb. 25	BATTERBURY, THOMAS	29, John Street, Bedford Row, W.C.
8	1868, Jun. 15	BEADEL, WILLIAM JAMES, M.P.	97, Gresham Street, E.C.
		(Past-President)	
1450	1888, Feb. 6	BEAUMONT, CHARLES	East Bridgford, near Nottingham.
136	1868, Nov. 2	BEAUMONT, GEORGE	East Bridgford, near Nottingham.
1153	1884, May 5	BECK, EDMUND	Sandringham, Norfolk.
1457	1888, Feb. 20	BECK, EDWARD WILLIAM	Melton Constable, East Dereham, Norfolk.
1561	1889, Jan. 28	BECKWITH, HENRY LANGTON	4, Brunswick Street, Liverpool.

D. Date of Election
 D. and of Transfer.

FELLOWS.

50	{ A. '83, May 25 } F. '87, May 23 }	*BEDELLS, CHARLES HERBERT . . .	6, John Street, Bedford Row, W.C.
25	1879, Jan. 6	BEDELLS, CHARLES KING . . .	6, John Street, Bedford Row, W.C.
17	1873, Dec. 8	BEESTON, FREDERICK . . .	30, Lincoln's Inn Fields, W.C.
51	1888, Feb. 6	BEEVER, WILLIAM FREDERICK HOLT	Greenlands Estate Office, Henley-on-Thames.
33	1888, Jan. 9	BEKEN, GEORGE	
30	1881, Dec. 19	BELL, GEORGE GRAHAM . . .	7, Victoria Street, S.W.
58	1888, Feb. 20	BELL, JOSEPH ASKEW . . .	Rufford Estate Office, Ollerton, Notts.
88	1875, Mar. 1	BENNETT, THOMAS OATLEY . .	Bruton, Somerset.
87	1884, May 26	BENINGFIELD, HENRY . . .	16, Union Court, E.C., and Ware, Hertfordshire.
31	1881, Dec. 19	BERRIDGE, ROBERT	181, Bishopsgate Street Without, E.C.
14	1884, Dec. 8	BERTWISTLE, JAMES	1, Tackett's Street, Blackburn.
84	1883, Dec. 17	BETRIDGE, EDWARD	28, Waterloo Street, Birmingham.
39	1885, Jan. 12	BICKERTON, GEORGE ARTHUR .	62, King William Street, E.C.
90	1869, Mar. 22	BIDWELL, CHARLES	Ely, Cambridgeshire.
369	1887, Feb. 7	BIGGE, CHARLES SELBY . . .	{ 30, Lincoln's Inn Fields, W.C., The Mote, Seven-oaks, Kent, and Bridgnorth.
396	1875, Apr. 12	BINGHAM, REUBEN	5, Bolton Street, Piccadilly, W.
181	1868, Oct. 26	BINNIE, THOMAS	207, Hope Street, Glasgow.
113	1868, Aug. 10	BIRD, JAMES BINFIELD . . .	{ West Cowes, Isle of Wight, and 14, Queen Victoria Street, E.C.
490	1888, Nov. 12	BIRD, JAMES BINFIELD, JUN. .	{ West Cowes, Isle of Wight, and 14, Queen Victoria Street, E.C.
154	1884, May 5	BIRD, WALTER	61, Edgware Road, W.
351	{ A. '87, Jan. 10 } F. '89, Feb. 25 }	BIRKETT, TOM	Foxton House, Penrith, Cumberland.
320	1886, May 17	BIRKETT, WILLIAM	Victoria Street, Bridlington Quay, Yorkshire.
326	1886, Dec. 6	BLACKFORD, ARTHUR	1, Gray's Inn Place, W.C.
262	1885, Mar. 23	BLAKE, FREDERICK	130, Queen Street, Portsea, Hants.
888	1883, Feb. 12	BLAKE, WILLIAM JOHN, JUN. .	45, High Street, Croydon.
778	1882, Mar. 13	BLAKEMORE, WILLIAM AGUTTER	24, Salisbury Street, Strand, W.C.
057	1884, Jan. 28	BLASHILL, THOMAS	London County Council, Spring Gardens, S.W.
058	1884, Jan. 28	BLEWITT, EDWARD ROBERT . .	Rainham, Essex.
511	{ A. '78, May 13 } F. '87, Mar. 7 }	BLOSSE, EDWARD F. LYNCH . .	Charles Street Chambers, Cardiff.
1452	1888, Feb. 6	BODY, JOHN BOND	Old Town Chambers, Plymouth.
330	1874, Feb. 2	BOLAM, CHARLES GODFREY . .	{ Estate Office, Boughton House, Kettering, Northamptonshire, and 82 & 83, Palace Chambers, S.W.
450	1876, May 8	BOLAM, WILLIAM THOMAS . .	{ Cross House, Westgate Road, Newcastle-upon-Tyne.
408	1875, Dec. 13	BOLDEN, JOHN LEONARD . . .	Duchy of Lancaster Office, Lancaster Place, W.C.
199	1869, May 3	BOND, ERASMUS	22, Surrey Street, Strand, W.C.
24	1868, Jun. 15	BONNY, JAMES RIPPOTH . . .	{ Palmer's Hill House, Palmer's Green, Southgate, N., and 47, Old Broad Street, E.C.
960	{ A. '83, May 25 } F. '86, Apr. 12 }	*BONTOR, FRANK ARTHUR . . .	29, Fleet Street, E.C.
813	1882, May 22	BOOKER, ALGERNON ERSKINE .	Albion House, Hyde Park Square, W.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
632	1881, Dec. 19	BOTTERILL, WILLIAM	23, Parliament Street, Hull.
1380	1887, Mar. 21	BOVILL, ALFRED	24, Charing Cross, S.W.
1507	1888, Dec. 10	BOWDEN, JOHN	14, Ridgefield, Manchester
1134	1884, Apr. 21	BOWER, WILLIAM JOHN	6, St. James Street, Derby.
62	1868, Jul. 13	BOWLER, WILLIAM ANTHONY	{ Kennedy House, 39, Somerleyton Road, Brixton S.W.
1249	1885, Feb. 9	BOWLES, ARTHUR HUMPHREY	Temple Court, near Guildford, Surrey.
1491	1888, Nov. 12	BOWMAN, JOHN JAMES	32, English Street, Carlisle.
1476	1888, Apr. 16	BOYES, HENRY COWELL	62, Lincoln's Inn Fields, W.C.
1325	1886, Nov. 22	BRACKETT, ARTHUR WILLIAM	27, High Street, Tunbridge Wells, Kent.
870	1888, Jan. 29	BRACKETT, WILLIAM	27, High Street, Tunbridge Wells.
1562	1889, Jan. 28	BRADY, CHARLES ALDIS	17, Warren Street, Stockport.
1397	1887, Dec. 5	BRAILSFORD, HENRY	Park Nook, near Derby.
1059	1884, Jan. 28	BRAY, HARRY	14, Warwick Court, Gray's Inn, W.C.
1441	1888, Jan. 23	BREACH, BENJAMIN L'ANSON	2, Serle Street, Lincoln's Inn Fields, W.C.
727	1882, Feb. 13	BRERETON, FRANC SADLEIR	292, High Holborn, W.C.
953	1883, May 25	BRINSLEY, GEORGE	30 and 31, New Bridge Street, E.C.
1370	1887, Feb. 24	BRIDGFORD, ERNEST JAMES	28, Cross Street, Manchester.
1309	1886, Mar. 8	BRIDGFORD, ROBERT, C.B.	28, Cross Street, Manchester.
829	1882, Dec. 18	BRIDGEWATER, BENILEY JAMES	80, Cheapside, E.C.
359	1874, Dec. 7	BROOK, JAMES	12, 13, & 14, Estate Buildings, Huddersfield.
1060	1884, Jan. 28	BROWN, BRADSHAW	59, Fenchurch Street, E.C.
322	1874, Jan. 5	BROWN, DANIEL JOHNSON	61, Lincoln's Inn Fields, W.C.
1500	1888, Nov. 26	BROWN, FRANK JOHN	Tring, Herts.
68	1868, Jul. 13	BROWN, GEORGE	Roborough House, Barnstaple, Devonshire.
634	1881, Dec. 19	BROWN, GEORGE JAMES	8, Spring Gardens, S.W.
933	1883, April 30	BROWN, JOHN POWLES	21, East Street, Hereford.
173	1869, Feb. 22	BROWN, THOMAS FORSTER	Guildhall Chambers, Cardiff.
165	1869, Feb. 8	BROWN, WILLIAM	Tring, Herts.
1313	1886, May 3	BROWN, WILLIAM BLUMFIELD	5, Henrietta Street, W.C.
1291	1886, Jan. 11	BRYDON, ROBERT	The Dene, Seaham-Harbour, Durham.
216	1870, Dec. 12	BUCHAN, THOMAS	15, Barrack Street, Dundee.
77	1868, July 13	BUCK, ALBERT	Worcester.
1542	1889, Jan. 14	BUCK, HERBERT WILSON	Pierpoint Street, Worcester.
1281	{ A. '85, Dec. 7 } { F. '89, Jan. 14 }	*BUCKLAND, ALFRED VIRGOE	60, Cannon Street, E.C.
270	1871, Dec. 18	BUCKLAND, FRANK BOWRY	Windsor.
1215	1884, Dec. 8	BURD, LAURENCE	Mayfield, Shrewsbury.
1543	1889, Jan. 14	BURD, TIMOTHEUS HENRY	School Gardens, Shrewsbury.
80	1868, Jul. 20	BURNELL, EDWARD HENRY	32, Bedford Row, W.C.
635	1881, Dec. 19	BURNETT, DAVID	14, Nicholas Lane, E.C.
1625	1889, May 13	BURNETT, GEORGE JOHN MULCASTER.	{ Little Kendals, near Elstree, Herts.
379	1875, Feb. 1	BURROUGHS, THOMAS HENRY	{ 16, Lower Berkeley Street, W., and 30, Lincoln's Inn Fields, W.C.

Date of Election and of Transfer.		FELLOWS.	
4	1882, May 22	BURROWS, ALFRED JOE . . .	Surrenden Estate Office, Pluckley, Kent.
6	1884, Dec. 8	BURTENSHAW, ALBERT . . .	Hailsham, Sussex.
3	1874, Jan. 5	BUZZARD, ALFRED LINDSEY . .	22, Surrey Street, Strand W.C.
7	1887, Mar. 7	CANNING, WILLIAM BROWNE . .	Salisbury, and Elston, near Devizes.
17	{ A. '82, Mar. 27 } { F. '84, Jan. 14 }	CARD, HENRY CURTIS . . .	North Street, Lewes, Sussex.
32	{ A. '70, Feb. 7 } { F. '80, Nov. 22 }	CARRITT, ERNEST . . .	18 & 19, Great St. Helen's, E.C.
40	{ A. '82, Apr. 24 } { F. '83, Jan. 15 }	CARPENTER, EVAN GEORGE . .	45, High Street, Croydon, Surrey.
56	1881, Dec. 19	CARTWRIGHT, SIR HENRY EDWARD	1, Courtfield Gardens, S.W.
14	1876, Apr. 24	CASELL, JAMES ROBERT . . .	11, Billiter Square, E.C.
33	1889, Mar. 18	CASTLE, ARTHUR . . .	18, Merton Street, Oxford.
20	1888, April 16	CASTLE GEORGE RICHARD . .	Bicester, Oxford.
28	1874, Jan. 19	CASTLE, HENRY JAMES, SEN. . .	40, Chancery Lane, W.C. (Member of Council)
57	1881, Dec. 19	CASTLE, HENRY JAMES, JUN. . .	37, Bedford Row, W.C.
95	1873, Jan. 13	CASTLE, ROBERT . . .	Merton Street, Oxford.
01	{ A. '84, May 26 } { F. '87, Nov. 14 }	CASTLE, SYDNEY CHARLES COURTENAY . . .	{ 40, Chancery Lane, W.C., and Neustead, Auck- land Road, Upper Norwood, S.E.
78	1872, Mar. 11	CASTLE, WILLIAM HENRY BALDWIN	40, Chancery Lane, W.C.
147	1870, Dec. 12	CATES, ARTHUR . . .	7, Whitehall Yard, S.W.
162	1875, Jan. 4	CAVE, HENRY H. . . .	The Manor House, Brigg, Lincolnshire.
180	1888, Apr. 30	CAVE, THOMAS NEWMAN . . .	Horton, Northamptonshire.
263	1885, Mar. 23	CHADWICK, SPENCER . . .	17, Parliament Street, S.W.
361	1884, Jan. 28	CHANCELLOR, ALBERT . . .	1, King Street, Richmond, Surrey.
219	1870, Jan. 10	CHANCELLOR, FREDERICK . . .	20, Finsbury Circus, E.C., and Chelmsford, Essex.
274	1885, Nov. 23	CHESTERTON, EDWARD . . .	22, Lower Phillimore Place, Kensington, W.
135	1884, Apr. 21	CHESTON, CHESTER . . .	Dashwood House, New Broad Street, E.C.
57	1868, Jul. 6	CHINNOCK, FREDERICK GEORGE	11, Waterloo Place, S.W.
347	1887, Jan. 10	CLARE, EDWARD LOVELL . . .	{ Estate Office, Tong Hall, Drighlington, Bradford, and 33, Friar Lane, Leicester.
563	1889, Jan. 28	CLARE, WILLIAM HARCOURT LOVELL . . .	{ Friar Lane, Leicester.
581	1882, Jan. 16	CLARK, SAMUEL . . .	8, New Cavendish Street, W.
582	1882, Jan. 16	CLARKE, ALFRED DUDLEY . .	Southwick Estate Office, Fareham, Hants.
074	{ A. '84, Jan. 2 } { F. '86, Jan. 11 }	CLARKE, HOWARD CHATFEILD .	63, Bishopsgate Street Within, E.C.
508	1888, Dec. 10	CLARKE, JOHN WILLIAM . . .	Guisbrough, Yorkshire.
973	1888, Nov. 12	CLARKE, RICHARD . . .	Surveyor's Office, Parish Offices, Birmingham.
27	1868, Jun. 15	CLARKE, THOMAS CHATFEILD .	63, Bishopsgate Street Within, E.C. (Vice-President)
122	{ A. '84, Mar. 10 } { F. '89, Jan. 28 }	CLIFTON, WILLIAM EDWARD . .	7, East India Avenue, Leadenhall Street, E.C.
310	1886, Mar. 8	CLOUGH-TAYLOR, HORACE GEO.	Friar Lane, Leicester.
29	1868, Jun. 15	CLUTTON, HENRY . . .	Hartswood, Reigate, Surrey.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
6	1868, Jun. 15	CLUTTON, JOHN	9, Whitehall Place, S.W.
		(<i>Past-President</i>)	
78	{ A. '68, Jul. 13 } { F. '75, May 10 }	CLUTTON, JOHN HENRY	9, Whitehall Place, S.W.
61	{ A. '68, Jul. 6 } { F. '74, Apr. 13 }	CLUTTON, RALPH	9, Whitehall Place, S.W.
221	{ A. '70, Jan. 10 } { F. '75, Dec. 13 }	CLUTTON, RALPH WILLIAM	Hartswood, Reigate, Surrey.
65	1868, Jul. 13	CLUTTON, ROBERT GEORGE	9, Whitehall Place, S.W.
		(<i>Member of Council</i>)	
153	1869, Jan. 11	CLUTTON, WILLIAM JAMES	The Mount, York.
713	1882, Jan. 30	COBB, HERBERT MANSFIELD	Higham, Kent, and 53, Lincoln's Inn Fields, W.C.
31	1868, Jun. 15	COBB, ROBERT LAKE	Higham, Kent, and 53, Lincoln's Inn Fields, W.C.
1544	1889, Jan. 14	COBHAM, CHARLES	{ "The Shrubbery," Gravesend, Kent, and Local Board Office, Grays, Essex.
1574	1889, Feb. 11	COLES, JOHN ROBERT	181, Queen Victoria Street, E.C.
769	{ A. '82, Feb. 27 } { F. '84, Jan. 28 }	COLGATE, THOMAS	Sheffield Park, Uckfield, Sussex.
119	1868, Aug. 17	COLLINS, HENRY HYMAN	61, Old Broad Street, E.C.
1501	1888, Nov. 26	COMBES, CYRUS	{ Tisbury, Wilts, and Misterton, Crewkerne Somerset.
193	1869, Apr. 5	COMELY, JOHN GILL	Winchester, Hants.
1095	1884, Jan. 14	COOK, EDWARD SAMUEL	60, Queen Victoria Street, E.C.
1564	1889, Jan. 28	COOKE, HENRY	Thong, near Gravesend.
1172	1884, May 19	COOPER, ARTHUR LESLIE	86, High Street, Maidenhead.
715	1882, Jan. 30	COOPER, JOHN GROVES	Bideford, Devon.
95	1883, Feb. 26	COOPER, JOHN THOMAS	41, Moorgate Street, E.C.
45	1876, Apr. 24	COOTE, GEORGE	Smeetham Hall, Sudbury, Suffolk.
1597	1889, Mar. 4	CORBETT, EDWIN WORTLEY } MONTAGU }	Bute Estate Office, Castle Street, Cardiff.
1581	1889, Feb. 25	CORDEROY, GEORGE	19, Queen Anne's Gate, S.W.
984	1883, April 30	COUCHMAN, ROBERT EDWARD	3, Bennett's Hill, Birmingham.
556	1880, Jan. 5	COVERDALE, FREDERICK JOHN	Ingatestone Hall, Essex.
728	1882, Feb. 13	COVERDALE, HENRY	Cossey, Norfolk.
495	1878, Jan. 28	COWGILL, WILLIAM	Bradford.
729	1882, Feb. 13	COX, GEORGE JAMES	1, Promenade, Cheltenham.
159	1869, Jan. 25	CRAWTER, JOHN	Cheshunt, Herts.
961	{ A. '83, May 25 } { F. '88, Nov. 26 }	CRAWTER, JOHN, JUN.	{ 4, Great James Street, Bedford Row, and Cheshunt, Herts.
160	1869, Jan. 25	CRICKMAY, GEORGE RACKSTROW	{ 17, Parliament Street, S.W., and St. Thomas Street, Weymouth.
730	1882, Feb. 13	CRONK, EDWYN EVANS	12, Pall Mall, S.W., and Sevenoaks, Kent.
731	1882, Feb. 13	CRONK, FRANK	12, Pall Mall, S.W., and Sevenoaks, Kent.
871	1883, Jan. 29	CRONK, WILLIAM HENRY	Sevenoaks, Kent.
416	1876, Jan. 10	CROSS, JOHN	77, King Street, Manchester.
307	1873, Apr. 21	CROSS, WILLIAM STEPHENS	18, Outer Temple, and 2, Cecil Street, Strand, W.C.
889	{ A. '75, Mar. 1 } { F. '80, Nov. 8 }	CRUSE, EDMUND	34, High Street, Warminster, Wiltshire.
1604	1889, Mar. 18	CUNDY, HUBERT JOHN	Wetherby and Leeds, Yorkshire.

p. Date of Election and of Transfer.	FELLOWS.	
32 1868, Jun. 15	CURREY, HENRY	37, Norfolk Street, W.C.
35 1889, Jan. 23	CURREY, PERCIVALL	37, Norfolk Street, W.C.
31 1887, Mar. 21	CURRY, HENRY JOHN	58, High Street, Stockton-on-Tees.
31 1880, Dec. 13	CURTIS, CHARLES EDWARD	Deanyers, Alton, Hants.
33 1877, Apr. 16	CURTIS, ROBERT LEABON	119 and 120, London Wall, E.C.
43 1879, Apr. 23	CURTIS, SAMUEL PERKINS	119 and 120, London Wall, E.C.
96 1883, Dec. 17	DAINTREE, JOHN OSBORN	"Lola," Teignmouth, Devon.
387 { A. '75, Feb. 15 } F. '84, Jan. 14 }	DALE, JOHN	16, Whitehall Place, S.W.
388 1881, Dec. 19	DALLAS, EDWIN STUART	34, Great James Street, Bedford Row, W.C.
387 1883, Dec. 17	DANIEL, HARRY AUGUSTUS HOOD	Chasefield, Fishponds, near Bristol.
732 1882, Feb. 13	DANN, HENRY	Bexley, Kent.
510 1878, Apr. 29	DARLEY, WILLIAM	Eastfield, Askern, Doncaster.
396 1883, Feb. 26	DASH, THOMAS ALEXIS	12, Whitehall Place, S.W.
509 1888, Dec. 10	DAVIES, GEORGE HUMPHREYS	22, Buckingham Street, Adelphi, W.C.
583 1889, Feb. 25	DAVIES, JOHN	Mollington, Chester.
300 1873, Feb. 10	DAVIES, JOHN MORGAN	Froodvale, Llandilo, Carmarthenshire.
491 { A. '77, Dec. 10 } F. '81, Nov. 14 }	DAVIS, JAMES	32, Strand, W.C.
397 1883, Feb. 26	DAW, WILLIAM HERBERT	62, Coleman Street, E.C.
009 { A. '83, Dec. 17 } F. '87, Nov. 14 }	*DAY, WILLIAM, JUN.	23, High Street, Maidstone, Kent.
683 1882, Jan. 16	DEACON, THOMAS MARK	1, Adelaide Street, Charing Cross, S.W.
442 1888, Jan. 23	DEBENHAM, FRANK GISSING	Cheshunt Park, Herts, and 80, Cheapside, E.C.
085 1884, Feb. 11	DEBENHAM, THOMAS NUNN	80, Cheapside, E.C.
116 1884, Mar. 10	DENNANT, WILLIAM FREETH	15, Walbrook, E.C.
863 1883, Jan. 15	DENT, RALPH JOHN	Streatham House, Darlington.
8 1868, Jun. 15	DENTON, JOHN BAILEY	Palace Chambers, 9, Bridge Street, S.W.
759 1882, Feb. 27	DEW, WILLIAM ARTHUR	Wellfield House, Bangor.
1228 { A. '84, Dec. 8 } F. '85, May 18 }	*DICKSON, THOMAS ARTHUR	28, Cross Street, Manchester.
884 1883, Feb. 12	DINWIDDY, THOMAS	Croom's Hill, Greenwich Park.
169 { A. '69, Feb. 8 } F. '78, Feb. 25 }	DODGSON, WILFRED LONGLEY	{ The Court, Cleobury North, Bridgnorth, and 55, Broad Street, Ludlow.
1136 1884, Apr. 21	DOLL, CHARLES FITZROY	74, Gower Street, Bedford Square, W.C.
1250 1885, Feb. 9	DONNE, HENRY	Leek Wootten, Warwick.
1582 1889, Feb. 25	DORNING, ELIAS	41, John Dalton Street, Manchester.
163 { A. '69, Jan. 25 } F. '82, Nov. 31 }	DOWDEN, HENRY JOSEPH	6, Spring Gardens, S.W.
716 1882, Jan. 30	DOWLING, CLEMENT	32, Craven Street, W.C.
493 1878, Jan. 14	DOWNING, FREDERICK	7A, Whitehall Yard, S.W.
317 { A. '82, May 22 } F. '84, May 19 }	DRAPER, ARTHUR THOMAS	Friar Lane, Leicester.
1348 1887, Jan. 10	DEAY, ALFRED	Town Hall Chambers, Hastings, Sussex.
301 1873, Feb. 10	DREW, HENRY	15, Queen Street, Exeter.
1386 { A. '86, Dec. 6 } F. '88, Nov. 12 }	*DREW, HENRY ALBAN	15, Queen Street, Exeter.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
275	1872, Feb. 26	DREW, JOHN	{ 15, Queen Street, Exeter, and Powderham Castle near Exeter.
1095	{ A. '84, Feb. 11 } { F. '89, Jan. 14 }	DREW, JOHN GOULD	15, Queen Street, Exeter.
913	1883, April 2	DREWITT, GEORGE	94, High Street, Guildford.
419	{ A. '76, Jan. 10 } { F. '78, Feb. 25 }	DRIVER, CHARLES WILLIAM	4, Whitehall, S.W.
9	1868, Jun. 15	DRIVER, ROBERT COLLIER (Vice-President)	4, Whitehall, S.W.
582	1880, Dec. 13	DRIVER, ROBERT MANNING	4, Whitehall, S.W.
684	1882, Jan. 16	DRURY, EDWARD DRU	25, Queen Anne's Gate, S.W.
324	1874, Jan. 5	DUNCH, CHARLES.	St. Clement's House, St. Clement's Lane, E.C.
252	1871, Jan. 30	DUNLOP, ALEXANDER MILNE (Member of Council)	3, Old Palace Yard, S.W.
792	1882, Apr. 24	DYER, WILLIAM JOHN	Montpelier Row, Blackheath, S.E.
35	1868, Jun. 15	DYMOND, FRANCIS WILLIAMS	Exeter.
1251	1885, Feb. 9	EADE, ARTHUR WILLOUGHBY FRENCH	{ Feethams, Darlington.
1584	1889, Feb. 25	EAGLE, WILLIAM.	77, King Street, Manchester.
864	1883, Jan. 15	EALLES, FREDERICK ERNEST	9, Welbeck Street, W.
1585	1889, Feb. 25	EAMES, EDWARD	Stoke Manor, near Alresford, Hants.
1210	1884, Nov. 10	EDWARDES, CHARLES BIDWELL	The Precincts, Peterborough.
689	1881, Dec. 19	EGERTON, HUBERT DECIMUS	8, New Road, Oxford.
988	1883, Dec. 17	EGGAR, JAMES ALFRED	9, West Street, Farnham, Surrey.
1173	1884, May 19	EGGINTON, JOHN	150, Friar Street, Reading.
530	{ A. 1879, Jan. 20 } { F. 1883, Dec. 3 }	EILOART, FREDERICK EDWARD	40, Chancery Lane, W.C.
1434	1888, Jan. 9	ELGAR, J. EDWARD	Crockshard, Wingham, Kent.
1401	1887, Dec. 19	ELLEN, FREDERICK CHARLES	The Auction Mart, Andover.
1086	1884, Jan. 14	ELLIOTT, CHARLES	The Fawns, Ermington, Ivy Bridge, Devon.
577	{ A. '80, Mar. 15 } { F. '87, Nov. 14 }	ELLIS, ERNEST HAROLD	132, High Street, Guildford.
830	1882, Dec. 18	ELLIS, HENRY	60, Chancery Lane, W.C.
885	1883, Feb. 12	ELLIS, RICHARD ADAM	49, Fenchurch Street, E.C.
380	1875, Feb. 1	ELLIS, SIR JOHN WHITTAKER, BART., M.P.	{ 29, Fleet Street, E.C., and 18, Old Broad Street, E.C.
276	1872, Feb. 26	EMMANUEL, BARROW	2, Finsbury Circus, E.C.
898	1883, Feb. 26	EVANS, ROBERT	Eldin Chambers, Wheeler Gate, Nottingham.
338	{ A. 1874, Feb. 16 } { F. 1876, Nov. 27 }	EVANS, WILLIAM ERNEST	School Gardens, Shrewsbury.
685	1882, Jan. 16	EYE, JOHN RICHARD	St. Paul's Square, Bedford, Bedfordshire.
104	1868, Aug. 3	EYE, WILLIAM	10, Union Court, Old Broad Street, E.C.
1882	1887, Mar. 21	EVERARD, JOHN BREEDON	6, Millstone Lane, Leicester.
311	1873, May 5	EVES, GEORGE	Uxbridge, Middlesex.

Ap. No.	Date of Election and of Transfer.	FELLOWS.	
557	1880, Jan. 5	FAIR, JACOB WILSON	{ Haigh Hall, Wigan, and 8, Winckley Street, Preston.
560	1888, Dec. 10	FAIR, JAMES STRETTON	{ Estate Offices, Lytham, and 4, Winckley Street, Preston.
574	1884, May 19	FAIR, THOMAS	Estate Offices, Lytham, Lancashire.
562	1884, Jan. 28	FARMER, EDMUND	80, Cheapside, E.C.
521	1886, May 17	FAWKES, ALGERNON	Sudbury, Derby.
537	1884, Jan. 14	FAYERMAN, GEORGE METCALFE	88, The Parade, Leamington, Warwickshire.
402	1887, Dec. 19	FENN, JOHN	{ The Hall, Ardleigh, and 146, High Street, Colchester.
565	{ A. '80, Jan. 19 } { F. '87, Mar. 21 }	FENNING, HERBERT SAMUEL	St. Paul's Square, Bedford, Bedfordshire.
574	1883, Nov. 12	FERRIS, GEORGE	Milton Manor, Pewsey, Wilts.
831	1882, Dec. 18	FIDDIAN, WILLIAM	98, High Street, Stourbridge.
297	1873, Jan. 27	FIELD FRANCIS HAYWARD	Merton Street, Oxford.
872	1883, Jan. 29	FIELD, JAMES FREDERICK	57, Borough High Street, S.E.
322	1886, May 17	FIELD, WALTER WILLIAM	57, Borough High Street, S.E.
927	{ A. '83, Apr. 16 } { F. '89, Jan. 14 }	FISHER, CHARLES BROWNING	Hill Crest, Market Harborough.
1459	1888, Feb. 20	FISHER, EDWARD KNAPP	Market Harborough, Leicestershire.
1088	1884, Jan. 14	FLEETWOOD, GEORGE	15, Furnival's Inn, E.C.
1465	1888, Mar. 5	FLETCHER, THOMAS	Dunkenhalgh, Clayton-le-Moors, near Accrington.
562	1880, Jan. 19	FLOCKTON, THOMAS JAMES	15, St. James' Row, Sheffield.
640	1881, Dec. 19	FORREST, ROBERT	Windsor Estate Office, St. Fagans, near Cardiff.
551	1873, Dec. 8	FORSHAW, EDWARD	Basford, Stoke-upon-Trent.
1039	1884, Jan. 14	FOSBERY, WILLIAM THOMAS EXHAM	{ Warwick.
279	1872, Mar. 11	FOSTER, CHARLES ROLLS	54, Pall Mall, S.W.
641	1881, Dec. 19	FOSTER, JOSEPH BURGESS	4, Cambridge Street, Plymouth, Devon.
687	1882, Jan. 16	FOULKES, SEPTIMUS GIFFORD	Tring, Herts.
686	1882, Jan. 16	FOWLER, FREDERICK	St. James' Street, Sheffield.
832	1882, Dec. 18	FOWLER, HENRY	6, Waterloo Street, Birmingham.
1403	1887, Dec. 19	FOWLER, RICHARD	118, Colmore Row, Birmingham.
1605	1889, Mar. 18	FOWLER, SYDNEY	9, Craig's Court, Charing Cross, S.W.
1545	1889, Jan. 14	FRANCIS, GEORGE FUTVOYE	Eaton Chambers, Buckingham Palace Road, S.W.
921	1883, April 16	FRANKLIN, THOMAS	Ascot, near Wallingford.
922	1883, April 16	FRANKLIN, WILLIAM TAYLOR	Ascot, near Wallingford.
1217	1884, Dec. 8	FREUER, WILLIAM	West Rudham, Swaffham, Norfolk.
734	1882, Feb. 13	FRYER, GEORGE	{ 15, Parliament Street, Hull, and Rose Villa, Bishop Wilton, near York.
369	1875, Jan. 18	FRY, GEORGE FREDERICK	46, London Road, Dover, Kent.
1068	1884, Jan. 28	FULLER, ERNEST	98, Wimpole Street, W.
750	{ A. '82, Feb. 13 } { F. '87, Nov. 14 }	FULLER, GEORGE JOHN	85 & 87, Gresham Street, E.C.
1040	1884, Jan. 14	FULLER, HARRY	83, High Street, Croydon.

Dip. No. Date of Election and of Transfer.

FELLOWS.

947	{ A. '83, May 21 F. '88, Nov. 26 }	FULLER, HERBERT HENRY	15, Serjeants' Inn, Fleet Street, E.C.
775	1882, Mar. 13	FURBER, HERBERT	2, Warwick Court, Gray's Inn, W.C.
1064	1884, Jan. 28	FURBER, WILLIAM	2, Warwick Court, Gray's Inn, W.C.
417	1876, Jan. 10	GAIRDNER, EDWARD JAMES	27, Southampton Buildings, W.C.
761	1882, Feb. 27	GALE, JOSEPH JOHN	Market Place, Wallingford, Berks.
819	1882, Nov. 13	GALPIN, CHARLES ALEXANDER	36, Pembroke Street, Oxford.
820	1882, Nov. 13	GALPIN, JOHN	36, Pembroke Street, Oxford.
55	1868, Jul. 6	GALSWORTHY, FREDERICK THOMAS	11, Waterloo Place, S.W.
1606	1889, Mar. 18	GANDY, JAMES	22, Essex Street, Strand, W.C.
735	1882, Feb. 13	GARDINER, EDWARD JAMES	110, Great Russell Street, W.C.
127	1868, Sep. 28	GARDINER, WILLIAM JAMES	110, Great Russell Street, W.C.
98	{ A. 1868, Jul. 27 F. 1883, Nov. 12 }	GARRARD, ARTHUR (Member of Council)	66, Cannon Street, E.C.
688	1882, Jan. 16	GATER, CALEB WILLIAM	Salisbury, Wilts.
1203	{ A. '84, May 26 F. '89, Jan. 14 }	GAYFORD, HENRY JOHN	Raynham Estate Office, East Raynham, Norfolk
935	1883, April 30	GERMAN, GEORGE	Ashby-de-la-Zouch, Leicestershire.
887	1883, Feb. 12	GERMAN, JOHN	Ashby-de-la-Zouch, Leicestershire.
1161	{ A. '84, May 5 F. '87, Nov. 14 }	*GIBB, WILLIAM PASHLEY	75, Stamford Street, S.E.
1620	1889, Apr. 29	GIBSON, DENSTON	93, New Street, Birmingham.
381	1875, Feb. 1	GILBERT, WILLIAM HENRY SAINSBURY	} 62, Old Broad Street, E.C.
1621	1889, Apr. 29	GILLART, DAVID	Mostyn, Llandudno, Carnarvonshire.
569	1880, Feb. 2	GILLART, RICHARD	Machynlleth, Montgomeryshire.
1466	1888, Mar. 5	GILPIN-BROWN, WILLIAM DUNDAS	Blankney Estate Office, Metheringham, Lincoln
213	1869, Dec. 6	GIRDWOOD, JAMES	18, Adam Street, Adelphi, W.C.
420	1876, Jan. 24	GLASIER, GEORGE HENRY BROUGHAM	} 6, Spring Gardens, S.W.
1566	1889, Jan. 28	GODDARD, JOSEPH	{ 6, Market Street, Leicester, and Carlton Chambers, 12, Regent Street, S.W.
1286	{ A. '85, Dec. 7 F. '86, May 17 }	*GODFREY, ROBERT	Valentine Road, King's Heath, near Birmingham
1511	1888, Dec. 10	GOODACRE, ROBERT JOHNSON	Friar Lane, Leicester.
989	1883, Dec. 17	GOODCHILD, JOSIAH	81, Finsbury Pavement, E.C.
1546	1889, Jan. 14	GOODWYN, LEONARD WILLIAM	{ 8, Granville Chambers, Granville Place, Portman Square, W.
314	{ A. '78, May 19 F. '78, Mar. 11 }	GORE, SPENCER W.	16, Whitehall Place, S.W.
1567	1889, Jan. 28	GOTT, FRANK	3, East Parade, Leeds.
478	{ A. '77, Feb. 12 F. '82, Dec. 18 }	GOTTO, FREDERICK EDWARD	Stony Stratford, Bucks.
578	1880, Apr. 12	GOULDING, WILLIAM PURDHAM	41, Moorgate Street, E.C.
370	1875, Jan. 18	GRAHAM, WILLIAM	Victoria Chambers, Newport, Monmouthshire.
1218	1884, Dec. 8	GRAIN, ARTHUR TRESS	2, St. Andrew's Hill, Cambridge.
827	{ A. '82, Dec. 4 F. '85, Jan. 12 }	GRANT, JAMES	Penrallt, Llanidloes, Montgomeryshire.

ip. No.	Date of Election and of Transfer.	FELLOWS.	
260	1885, Mar. 9	GRAVES, WALTER	Winchester House, Old Broad Street, E.C.
390	1882, Jan. 16	GREEN, JAMES	22, Chancery Lane, W.C.
188	1884, May 26	GREEN, SAMUEL	28 and 29, St. Swithin's Lane, E.C.
192	1888, Nov. 12	GREEN, VALENTINE	{ Craven House, Bottesford, Nottingham, and Knipton, near Grantham.
087	1884, Feb. 11	GRELLIER, HARLEY MAIR	6, Queen Anne's Gate, S.W.
371	1875, Jan. 18	GREY, CHARLES GREY	{ Office of the Irish Land Commission, 24, Upper Merrion Street, Dublin.
611	1889, Apr. 1	GRIMLEY, EDWIN FEARN	40, Temple Street, Birmingham.
612	1889, Apr. 1	GRIMLEY, THOMAS	40, Temple Street, Birmingham.
483	1876, Mar. 20	GWYTHER, WILLIAM WARLOW	43, Lincoln's Inn Fields, W.C.
586	1889, Feb. 25	HACKFORD, GEORGE	6, Queen Anne's Gate, S.W.
347	1874, Mar. 16	HADDOCK, ROLAND	45, High Street, Croydon, Surrey.
619	1881, May 2	HALL, ERNEST	166, Queen Street, Portsea, Hants.
517	1878, Dec. 9	HALL, JOHN GEORGE	1, Masbro' Road, West Kensington, W.
923	1888, April 16	HALL, WALTER	38, Chancery Lane, W.C.
1189	1884, May 26	HALLETT, WILLIAM BROWN	{ 11, Queen Victoria Street, E.C., and 278, Hollo- way Road, N.
691	1882, Jan. 16	HAMILTON, HENRY	64 & 65, Coleman Street, E.C.
481	1888, Apr. 30	HANCOCK, WILLIAM ST. JOHN HÜ	Hong Kong, China, and 14, Clifford's Inn, E.C.
1240	1885, Jan. 12	HANNEN, REGINALD ST. JOHN	Fordingbridge, Salisbury.
892 { A. '83, Feb. 12 } F. '89, Jan. 14 }		*HANSELL, REGINALD GODDARD	Lonsdale Chambers, 27, Chancery Lane, W.C.
1245	1885, Jan. 26	HANSON, AMOS	35, Church Street, St. Helen's, Lancashire.
642	1881, Dec. 19	HARDCASTLE, FREDERICK HENRY APPLETON	{ 34, Southampton Street, Strand, W.C.
481 { A. '77, Mar. 26 } F. '82, Dec. 18 }		HARDING, EDWARD ERNEST	80, St. Paul's Churchyard, E.C.
363	1875, Jan. 4	HARDING, JOSEPH	49, Lune Street, Preston.
643	1881, Dec. 19	HARDING, SIDNEY LONGHURST	St. Albans, Herts.
1482	1888, Apr. 30	HARDY, RICHARD THOMAS ASH	Estate Offices, Marchington, Staffordshire.
1613	1889, Apr. 1	HARGRAVES, STEPHEN	St. Andrew's Chambers, Albert Square, Manchester
496 { A. 1878, Jan. 28 } F. 1883, Nov. 12 }		HARRINGTON, GEORGE FREDERICK	16, Abchurch Lane, E.C.
990	1883, Dec. 17	HARRIS, JAMES	Winchester, Hants.
263	1871, Feb. 27	HART, WILLIAM FREDERICK	Lambeth Waterworks, Brixton Hill, S.W.
1512	1888, Dec. 10	HARVEY, FREDERICK HENRY	Clapham Junction House, S.W.
312	1873, May 19	HASLAM, DRYLAND	17, Friar Street, Reading.
962 { A. '83, May 25 } F. '83, Apr. 1 }		*HASLUCK, LANCELOT GERALD	Green Hill Park, New Barnet, Herts.
1607	1889, Mar. 18	HAUGHTON, WILLIAM HOGHTON	Highlands, Great Barford, St. Neots.
1472	1888, Mar. 19	HAWKINS, CHARLES	Downham Market, Norfolk.
1608	1889, Mar. 18	HAWLEY, HENRY MICHAEL	Tumby Lawn, Boston.
1513	1888, Dec. 10	HAYTON, JOSEPH WILLIAM	Devonshire Chambers, Carlisle.
644	1881, Dec. 19	HAYWARD, HENRY	Dover, Kent.
1253	1885, Feb. 28	HAYWOOD, HENRY	9, West Street, Hereford.

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54	1883, Jul. 6	HAYWOOD, WILLIAM, COLONEL	LIEUT.- } Guildhall, E.C.
1254	1885, Feb. 23	HAYWOOD, WILLIAM MATTHEWS.	9, West Street, Hereford.
883	1882, Dec. 1	HEARD, HERBERT	Shepton Mallet, Somerset.
692	1882, Jan. 16	HEATON, GEORGE HERBERT . .	Endon, near Stoke-upon-Trent, Staffordshire.
617	1881, Apr. 4	HEBBLETHWAITE, LOUIS . .	Conservancy Buildings, Hull.
1327	1886, Dec. 6	HEDLEY, JOHN HUNT	55, John Street, Sunderland.
1088	1884, Feb. 11	HEDLEY, ROBERT WILKIN . .	31A, Colmore Row, Birmingham.
250	1871, Jan. 15	HEDLEY, THOMAS FENWICK . .	Sunderland.
620	1881, May 2	HEDLEY, THOMAS FENWICK, JUN.	Sunderland.
1328	1886, Dec. 6	HENDRIKS, HENRY	25, Cannon Street, Birmingham.
1378	1887, Mar. 7	HEPPER, JOHN	East Parade, Leeds.
1219	1884, Dec. 8	HERBERT, ALLAN	The Market Place, Andover, Hants.
991	1883, Dec. 17	HERON, WILLIAM CHARLES . .	Uxbridge, Middlesex.
1575	1889, Feb. 11	HERRING, WILLIAM ARTHUR } WARWICK	62, Coleman Street, E.C.
1485	1888, Jan. 9	HESKETT, WILLIAM JAMES. . .	24, King Street, Penrith, Cumberland.
1065	1884, Jan. 23	HIGGINS, FREDERIC	Alford, Lincolnshire.
1311	1886, Mar. 22	HILL, WILLIAM BURROUGH . .	2, Albion Place, Southampton, Hants.
220	1870, Jan. 10	HILLIARD, GEORGE BRIDGE . .	Chelmsford, Essex.
1388	1887, Apr. 18	HILTON, JOHN	{ 33, Walbrook, E.C., and 17, Montpelier Row Blackheath.
671 { A. 1881, Dec. 19 } F. 1883, Nov. 12 }		HINE, GEORGE ERNEST	5, Waterloo Place, S.W.
900	1883, Feb. 26	HINE, GEORGE THOMAS	Victoria Street, Nottingham.
70	1868, Jul. 18	HIPPISLEY, EDWIN	Chamberlain Street, Wells, Somersetshire.
815	1882, May 22	HITCHCOX, WILLIAM	Victoria Chambers, Newport, Monmouthshire.
518	1878, Dec. 9	HOBGEN, FRANCIS NEALE . .	East Street, Chichester.
888	1883, Feb. 12	HOBSON, FREDERICK WILLIAM .	20, Coleman Street, E.C.
519	1878, Dec. 9	HODSON, GEORGE	Town Hall, Loughborough.
793	1882, Apr. 24	HOLBECH, ROBERT NEVILLE .	21, Bennett's Hill, Birmingham.
357	1874, Nov. 16	HOLDEN, JOHN	64, Cross Street, Manchester.
1155	1884, May 5	HOLIDAY, FREDERICK DEAN . .	Bicester, Oxfordshire.
1272	1885, Nov. 9	HOLME, JOHN	Owlet Ash, Milnthorpe, Westmoreland.
693	1882, Jan. 16	HOLMES, JAMES	23, Delamere Street, Ashton-under-Lyne.
1097 { A. '84, Feb. 11 } F. '89, Jan. 28 }		HOPE, WILLIAM ELLIOTT . . .	7, East India Avenue, Leadenhall Street, E.C.
794	1882, Apr. 24	*HORNE, WILLIAM EDGAR . .	{ 84, Basinghall Street, E.C., and 17, Great George Street, S.W.
1390	1887, May 9	HORNOR, CHARLES JARED . . .	32, Prince of Wales' Road, Norwich.
1391	1887, May 9	HORNOR, FRANCIS	Queen Street, Norwich.
1275	1885, Dec. 7	HORSEY, FREDERICK	11, Billiter Square, E.C.
11	1868, Jun. 15	HORSEY, THOMAS	11, Billiter Square, E.C.
174	1869, Feb. 22	HORSFALL, RICHARD	{ Post Office Buildings, George Street, Halifax Yorkshire.
1567	1889, Feb. 25	HOVENDEN, HENRY EDWARD . .	181, Bishopsgate Street Without, E.C.

No. Date of Election and of Transfer.	FELLOWS.	
15 1881, Dec. 19	HOVENDEN, THOMAS HENRY	181, Bishopsgate Street Without, E.C.
71 { A. '69, Feb. 8 } { F. '83, Mar. 12 }	HUBBERSTY, HENRY ALFRED	Buxton, Derbyshire.
16 1883, Apr. 30	HUDSON, ARTHUR BYRNE	19, Bennet's Hill, E.C.
18 1884, Mar. 10	HUDSON, JAMES	Penrith, Cumberland.
28 1868, Sep. 28	HUDSON, WILLIAM	{ Hope Lodge, 181, Grove Lane, Camberwell, and 19, Bennet's Hill, E.C.
39 1889, Mar. 18	HUGMAN, CHARLES EADY	9, Craig's Court, Charing Cross, S.W.
76 1882, Mar. 18	HULL, CHARLES	Euston Station, London, N.W.
75 1869, Feb. 22	HUMPHREYS, CHARLES	{ 6, Crosby Square, Bishopsgate Street Within, E.C.
27 1881, Dec. 5	HUMPHREYS, HENRY	Woodhouse, Loughborough, Leicestershire.
53 1874, May 11	HUNT, HENRY ARTHUR	45, Parliament Street, S.W.
81 1869, Mar. 8	HUNT, JOSIAH	6, Queen Anne's Gate, S.W.
26 1874, Jan. 19	HUSKINSON, WILLIAM LAMBE	The Manor House, Epperstone, Nottingham.
20 1884, Dec. 8	HUSSEY, FRANK TOOZE	{ The Grove, Cheddton Fitzpaine, Taunton, Somerset.
77 1888 Apr. 16	HUXLEY, WALTER FREEMAN	29, John Street, Bedford Row, W.C.
68 1880, Jan. 19	I'ANSON, EDWARD BLAKEWAY	7A, Laurence Pountney Hill, E.C.
37 1884, Apr. 21	INGE, CHARLES HENRY	Broom Leasoe, Whittington, Lichfield.
05 { A. '73, Feb. 10 } { F. '82, Jan. 16 }	INGRAM, WALTER FIELDE	83, High Street, Lewes, Sussex.
34 1882, Dec. 18	INMAN, MARSHALL NISBET	7, Bedford Row, W.C.
35 1882, Dec. 18	INNOCENT, CHARLES JOHN	Sheffield.
70 1880, Feb. 16	JACKSON, CHARLES	25, Brazennose Street, Mancheste .
109 1869, Jul. 26	JACKSON, FREDERICK	Nottingham.
104 1887, Dec. 19	JACKSON, WILLIAM TRESS	117, High Street, Sittingbourne.
102 1886, Jan. 25	JEANS, MARK	Marlborough, Wilts
736 1882, Feb. 13	JENKINSON, WILLIAM WILBER- FORCE	{ 6, Moorgate Street, E.C.
92 1883, Dec. 17	JEUDWINE, WILLIAM WYNNE	Chesterfield.
63 { A. '83, May 25 } { F. '85, Jan. 26 }	*JOHNSON, HENRY	35, Coleman Street, E.C.
95 { A. '69, Apr. 5 } { F. '73, Feb. 25 }	JONAS, HENRY	4, Whitehall, S.W.
95 1868, Jul. 27	JONAS, JOHN CARTER	27, Market Hill, Cambridge.
265 1885, Apr. 20	JONES, CHARLES	Normanhurst, Ealing.
77 1882, Mar. 13	JONES, CHARLES FREDERICK	Eldon Chambers, 30, Fleet Street, E.C.
64 { A. '83, May 25 } { F. '86, Dec. 6 }	*JONES, HENRY ARTHUR	11, Wellington Street, Strand, W.C.
308 1873, Apr. 21	JONES, HENRY PARR	Portway House, Warminster.
646 1881, Dec. 19	JONES, JAMES WILLIAM	54, Caledonian Road, Leeds.
349 1887, Jan. 10	JONES, WALTER BUTLER CLOUGH	Mynydd, Einyfed, Criccieth, North Wales.
467 1883, Mar. 5	JOSEPH, DELISSA	17 and 18, Basinghall Street, E.C.
106 1884, Feb. 25	JOYCE, JOHN HALL	Blackfordby, near Burton-on-Trent.
460 1888, Feb. 20	JUDD, FRANCIS SAVILE HARRY	Rickling, Bishop's Stortford.
993 1883, Dec. 17	JURD, WILLIAM	10, Oxford Street, Southampton.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
412	{ A. '75, Dec. 11 F. '87, Mar. 23 }	KAYE, JOHN EDWARD . . .	Grove Hall, Wakefield, Yorkshire.
1190	1884, May 26	KEDGLEY, CHARLES . . .	Hibernia Chambers, London Bridge, S.E.
530	1880, Nov. 8	KEIRLE, ROBERT . . .	117, Victoria Street, S.W.
975	1883, Nov. 12	KEMSLEY, JOSEPH WILLIAM . .	Woodford, Essex.
1191	1884, May 26	KENT, GEORGE EDWARD . .	Glendore, Clarendon Road, Southsea, Hants.
1614	1889, Apr. 1	KERSEY, ALEXANDER HENRY . .	21, Finsbury Pavement, E.C.
1125	{ A. '84, Mar. 10 F. '88, Dec. 10 }	*KING, ALFRED . . .	6, Spring Gardens, S.W.
873	1883, Jan. 29	KING, FRANK HULME . . .	Horsham, Sussex.
1192	1884, May 26	KING, HENRY . . .	Stourbridge, Worcestershire.
1193	1884, May 26	KING, THOMAS . . .	Pembroke House, Portsmouth, Hants.
191	1869, Mar. 22	KING, SIR WILLIAM DAVID . .	Lynwood, Waverley Road, Southsea, Hants.
808	1882, May 8	KINGSTON, SAMUEL . . .	Spalding, Lincoln.
1502	1888, Nov. 26	KIRBY, EDMUND . . .	5, Cook Street, Liverpool.
129	1868, Sep. 28	KNOOLLYS, JAMES EDWARD . .	Fitzhead Court, Taunton, Somerset.
264	1871, Feb. 27	KNOWLES, WILLIAM . . .	Albion Chambers, King Street, Gloucester.
107	1868, Aug. 3	LAMBERT, WILLIAM . . .	1, New Broad Street, E.C.
1398	1887, Dec. 5	LANCASTER, CHARLES HOLLAND	York Buildings, 14, Dale Street, Liverpool.
446	1876, Apr. 24	LANE, CECIL NEWTON . . .	Whiston Hall, Shifnal, Salop.
762	1882, Feb. 27	LANGRIDGE, GEORGE . . .	Public Rooms, Tunbridge Wells, Kent.
1514	1883, Dec. 10	LANGRIDGE, WILLIAM . . .	The Great Hall, Tunbridge Wells, Kent.
600	1881, Jan. 24	LANSDOWN, GEORGE . . .	5 & 7, Warwick Street, Charing Cross, S.W.
145	1868, Nov. 9	LAURANCE, JOHN . . .	Sexton Barns, Peterboro'.
1089	1884, Feb. 11	LAW, EDMUND . . .	29, Abington Street, Northampton.
513	1873, Nov. 11	LEANE, GEORGE HENRY . .	21, Queen Anne's Gate, S.W.
1461	1888, Feb. 20	LEANING, JOHN . . .	11, Poultry, E.C.
60	{ A. '68, July 6 F. '82, May 8 }	LEE, CHARLES WILLIAMS . .	8, Adelphi Terrace, W.C.
332	1874, Feb. 2	LEE, FREDERICK . . .	6, Great College Street, S.W.
1610	1889, Mar. 18	LEE, PHILIP SHIRLING . .	{ 35, Craven Street, W.C., and Oaklands, Woodford, Essex.
1090	1884, Feb. 11	LEE, WILLIAM . . .	143½, High Street, Guildford, Surrey.
229	1870, Feb. 7	LEES, JOHN . . .	Reigate, Surrey.
836	1882, Dec. 18	LEMON, JAMES . . .	Southampton.
675	{ A. '81, Dec. 19 F. '89, Mar. 18 }	LEONARD, HENRY HOLMES . .	202, Bishopsgate Street Without, E.C.
717	1882, Jan. 30	LEPPER, JOHN HARRAGE . .	Town Hall, Bromley, Kent.
1156	1884, May 5	LE ROSSIGNOL, FRANCIS . .	1, Gresham Buildings, Basinghall Street, E.C.
1176	1884, May 19	LETHBRIDGE, WALTER . .	1, Leigham Villas, Plymouth.
647	1881, Dec. 19	LIGHTFOOT, FRANCIS LOWRY . .	3, Old Palace Yard, S.W.
901	1883, Feb. 26	LIGHTFOOT, HENRY LE BLANC	Lower Lawn, Tisbury, Salisbury.
1588	1889, Feb. 25	LINAKER, HENRY . . .	Frodsham, Chester.
1361	1887, Jan. 24	LINES, RICHARD SAMUEL . .	103, Hammersmith Road, W,

ip. No.	Date of Election and of Transfer.	FELLOWS.	
105	1887, Dec. 19	LISTER-KAYE, CHARLES WILKIN- SON	} Osberton, Worksop, Notts.
737	1882, Feb. 13	LITTLE, WILLIAM CUTLACK	
949	{ A. '83, May 21 } { F. '88, Apr. 16 }	LITTLE, WILLIAM DAVIS	Middleton Stoney, Bicester, Oxon.
348	1881, Dec. 19	LOCK, WILLIAM HENRY	Instow, North Devon.
398	1875, Mar. 15	LOFTS, HENRY	130, Mount Street, Grosvenor Square, W.
188	1884, Apr. 21	LOOKER, JOHN	High Street, Huntingdon.
996	1887, Nov. 14	LOVEGROVE, HENRY	26, Budge Row, E.C.
124	1876, Feb. 7	LOVEJOY, ALFRED	35, Bucklersbury, E.C.
738	1882, Feb. 13	LOWE, CHARLES HARLOWE	Hampstead Vestry Hall, Haverstock Hill, N.W.
125	1876, Feb. 7	MCCALL, GEORGE	33, Victoria Chambers, Market Place, Blackburn.
315	1889, Apr. 1	MACIVER, COLIN	23, Bold Street, Warrington.
322	1889, Apr. 29	MCLEAN, DONALD	Dunrobin Estate Office, Golspie, Sutherlandshire.
161	1869, Jan. 25	MANN, CHARLES JOHN	29, Great George Street, S.W.
173	1875, Jan. 18	MANN, ROBERT WILKS	12, Lower Grosvenor Place, S.W.
316	1889, Apr. 1	MARGERESON, CHARLES FREDERICK	New Square, Chesterfield.
362	1887, Jan. 24	MARGETTS, JOHN WILLIAM	12, High Street, Warwick.
192	1869, Mar. 22	MARR, JAMES	8, Adam Street, Adelphi, W.C.
326	{ A. '81, Nov. 14 } { F. '84, Nov. 24 }	MARSHALL, LIONEL HASLER	Chippenham, Wilts.
976	1883, Nov. 12	MARTIN, GEORGE DENNIS	124-127, Mansion House Chambers, E.C.
134	1876, Mar. 20	MARTIN, GILSON	Chatsworth, Chesterfield.
664	1875, Jan. 4	MARTIN, HOWARD	{ 27, Chancery Lane, W.C., and Bolney Grange, Havelock Road, Croydon.
180	1870, Feb. 7	MARTIN, JAMES	
		(Member of Council)	Wainfleet, Lincolnshire.
704	{ A. '82, Jan. 16 } { F. '84, Jan. 28 }	MARTIN, WALTER	Wainfleet, Lincolnshire.
989	1889, Feb. 25	MARVIN, ALBERT EDWARD	Mare Hill, Carisbrooke, Isle of Wight.
998	1889, Mar. 4	MASON, CHARLES	Westgate, Louth, Lincolnshire.
991	1884, Feb. 11	MASON, WILLIAM ARTHUR	31A, Colmore Row, Birmingham.
103	1875, May 10	MASON, WILLIAM LUDLAM	The High Holme, Louth, Lincolnshire.
288	{ A. '85, Dec. 7 } { F. '88, Nov. 12 }	*MASSIE, FRANK	St. Paul's Chambers, Sheffield.
996	1882, Jan. 16	MASTERMAN, GEORGE HUGHES	35, Coleman Street, E.C.
994	1883, Dec. 17	MATHEWS, GEORGE SPENCER	15, Waterloo Street, Birmingham.
995	1883, Dec. 17	MATHEWS, JOSEPH DOUGLAS	11, Dowgate Hill, E.C.
39	1868, Jun. 15	MATHEWS, WILLIAM	15, Waterloo Street, Birmingham.
		(Member of Council)	
966	1884, Jan. 28	MATTHEWS, WILLIAM	8, Delahay Street, S.W.
399	1887, Dec. 5	MAUDE, RAYMOND WILLIAM	22, Great George Street, S.W.
718	1882, Jan. 30	MAYLARD, CHARLES GRASON	6, Great Queen Street, S.W.
937	1882, Dec. 18	MAYNARD, EDWARD	College Chambers, The Green, Richmond, Surrey.
562	1879, Dec. 8	MELLERSH, ALFRED WILLIAM	Godalming, Surrey.
379	1887, Mar. 7	MENZIES, WILLIAM	Egham, Surrey.

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764	1882, Feb. 27	MESSENGER, WILLIAM HARRY .	Hullbrook, Guildford, Surrey.
1223	1884, Dec. 8	*MICHELMORE, ALFRED . . .	Berry House, Totnes, Devon.
1493	1888, Nov. 12	MIDDLETON, REGINALD EMPSON	49, Parliament Street, S.W.
1568	1889, Jan. 28	MILES, WILLIAM FREDERICK .	Horsefair Street, Leicester.
697	1882, Jan. 16	MILLAR, CHARLES WILLIAM . .	14, Grafton Street, W.
1177	1884, May 19	MILLS, SAMUEL MEALING . . .	Orford Hill, Norwich.
1305	1886, Feb. 22	MILLS, WILLIAM EDWARD . . .	49, Hamilton Square, Birkenhead
477	1877, Feb. 12	MINTER, WILLIAM	81, Bondgate, Darlington.
1576	1889, Feb. 11	MOORE, ALFRED	144, Mile End Road, E.
1577	1889, Feb. 11	MOORE, FREDERIC	144, Mile End Road, E.
1165	{ A. '84, May 5 } { F. '88, May 14 }	*MOORE, HAROLD EDWARD . .	{ 41, Bedford Row, W.C., and Boreham, near Chelmsford, Essex.
1448	1888, Jan. 23	MORRIS, EDWARD HENRY . . .	Chirbury, Salop.
1119	1884 Mar. 10	MORRIS, HERBERT	Lewes, Sussex.
607	1881, Feb. 7	MORTIMER, JOHN CAMDEN . . .	5, Great Queen Street, S.W.
778	1882, Mar. 13	MULLETT, FREDERICK AUGUSTUS	Albion House, Hyde Park Square, W.
765	1882, Feb. 27	MUNRO, PHILIP	{ 2, St. Stephen's Chambers, New Baldwin Street Bristol.
1590	1889, Feb. 25	MURGATROYD, JAMES	23, Strutt Street, Manchester.
520	1878, Dec. 9	MURPHY, EDMUND	Dunfanaghy, Letterkenny, Ireland.
1406	1887, Dec. 19	MURRAY, GILBERT	Elvaston Estate Office, Derby.
809	1882, May 8	MYNORS, WALTER CHARLES } TOWERS	Little Ingestre, Stafford.
1591	1889, Feb. 25	NAPIER, HENRY BURROUGHES .	Chippenham, Wilts.
164	{ A. '69, Jan. 25 } { F. '82, Mar. 13 }	NASH, ALFRED JAMES	Farnham, Surrey.
139	1868, Nov. 2	NEALE, CHARLES JAMES	High Oakham, Mansfield, Notts.
531	1879, Feb. 3	NEAME, FREDERICK, JUN. . . .	Macknade, Faversham, Kent.
795	1882, Apr. 24	NEATE, ARTHUR WEBB	Hungerford, and Market Place, Newbury, Berks.
1814	1886, May 3	NEVE, HERBERT	Hole Park, Rolvenden, Kent.
414	{ A. '75, Dec. 13 } { F. '82, Feb. 27 }	NEVILLE, HENRY WILLIAM . .	{ Broughton Estate Office, 8, John Dalton Street Manchester.
1276	1885, Dec. 7	NEWMAN, ARTHUR HARRISON .	19A, Tooley Street, London Bridge, S.E.
289	1872, Dec. 9	NEWMAN, FRANCIS	Ryde, Isle of Wight.
1592	1889, Feb. 25	NEWMAN, GEORGE	20, Budge Row, E.C.
566	{ A. '80, Jan. 19 } { F. '86, Apl. 12 }	NEWMARCH, HENRY CHARLES .	35, Lincoln's Inn Fields, W.C.
1041	1884, Jan. 14	NEWSAM, SAMUEL WATERHOUSE	13, Bond Street, Leeds.
789	1882, Feb. 13	NEWSON, HARRY CARSS	57, Lincoln's Inn Fields, W.C.
374	1875, Jan. 18	NICHOLS, DANIEL CUBITT . . .	3, Howard Street, Strand, W.C.
401	1875, Apr. 26	NOCKOLDS, MARTIN	Saffron Walden, Essex.
1264	1885, Mar. 23	NOEL, BYRON BRUCE	East Horsley, Leatherhead.
435	1876, Mar. 20	NORMAN, JAMES MAURICE . . .	Uxbridge, Middlesex.
182	1869, Mar. 8	NORMAN, WILLIAM	8, Spring Gardens, S.W.

<i>Date of Election and of Transfer.</i>		FELLOWS.	
5	1868, Jul. 20	NORTH, GEORGE	Palace Chambers, 9, Bridge Street, S.W.
8	1883, May 25	*NORTH, GEORGE FREDERIC	Wroxton Estate Office, near Banbury, Oxon.
9	1889, Jan. 28	NORTHCROFT, HENRY	57, Charing Cross, S.W.
5	1871, Feb. 13	NOTLEY, RICHARD ALBERT	80, Cornhill, E.C.
8	1882, Jan. 16	NOTLEY, ROBERT PLEDGE	35, Bucklersbury, E.C.
6	{ A. '81, Dec. 19 } { F. '87, Feb. 7 }	NOTTAGE, WILLIAM GRIGGS	High Street, Windsor.
9	1868, Jul. 6	OAKLEY, CHRISTOPHER (Member of Council)	10, Waterloo Place, S.W.
6	1877, Apr. 30	OAKLEY, WILLIAM	10, Waterloo Place, S.W.
0	1881, Dec. 19	OBORNE, ALFRED WILLIAM	{ 9, Moorgate Street, E.C., and Wimbledon Park, Surrey.
8	1888, Mar. 5	OLDROYD, LINLEY	5, Oxford Place, Leeds.
6	1886, Feb. 22	ORGILL, JOHN BERWICK	21, Hart Street, Bloomsbury Square, W.C.
3	1869, Mar. 8	OWEN, THOMAS RULE	High Street, Haverfordwest, Pembrokeshire.
12	1884, Jan. 14	PAGE, ROBERT	9, Denman Street, London Bridge, S.E.
16	{ A. '75, Nov. 8 } { F. '81, April 4 }	PAIN, COARD SQUAREY	{ 14, North John Street, Liverpool, and 5, Vic- toria Street, Westminster, S.W.
5	1886, May 3	PARK, WILLIAM PHILIP	22, Guildhall Street, Preston, Lancashire.
33	1887, Mar. 21	PARKER, CHARLES ALFRED	{ 43, Finsbury Circus, E.C., and Woodham Mortimer Place, Maldon, Essex.
39	1885, May 18	PARKER, JOHN	Mansion House, Hereford.
37	{ A. '80, Jan. 19 } { F. '88, Jan. 9 }	PARKER, THE HON. CECIL THOMAS	Eccleston, Chester.
28	{ A. '81, Dec. 5 } { F. '84, Nov. 24 }	PARKIN, JOHN ROBERT	Idridgehay, near Derby.
35	1883, Jan. 15	PARMETER, FRANK	{ South View House, West Parade, Newcastle-on- Tyne.
95	1884, May 26	PARNELL, ROBERT	{ Market Place, Peterborough, and Oundle, North- amptonshire.
10	1888, Mar. 12	PARR, SAMUEL	New Broad Street House, E.C.
03	1888, Nov. 26	PARSONS, FRANK DONISTHORPE	{ Misterton, Crewkerne, Somerset, and Tisbury, Wilts.
88	1872, Dec. 9	PARSONS, HENRY	Misterton, Crewkerne, Somerset.
57	{ A. '83, May 25 } { F. '88, Dec. 10 }	PARSONS, ROBERT MAURICE PETERS	{ Misterton, Crewkerne, Somerset.
05	1875, Nov. 8	PATERSON, ROBERT	10, Hanover Street, Edinburgh.
01	1881, Jan. 24	PATTISSON, JACOB LUARD	6, Sussex Gardens, Hyde Park, W.
67	{ A. '83, May 25 } { F. '88, May 14 }	*PAULL, ALAN	6, Quality Court, Chancery Lane, W.C.
57	1884, May 5	PAXTON, EDWARD HAYTON	Bicester, Oxfordshire.
88	1880, Dec. 13	PAYNE, ALEXANDER	4, Storey's Gate, S.W.
19	1882, Jan. 30	PAYNE, FREDERICK	Town Hall, Bromley, Kent.
63	1887, Jan. 24	PECK, HENRY WILLIAM	6, Poultry, E.C.
70	1885, May 18	PECK, WILLIAM ROLAND	69, Lombard Street, E.C.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
889	1888, Feb. 12	PEEBLES, ALEXANDER . . .	Guildhall, E.C.
21	1868, Jun. 15	PENFOLD, JOHN WORNHAM . . . (Honorary Secretary)	29, Great George Street, S.W.
452	1876, May 8	PEPPERCORN, JOHN HUTCHINSON	Manor House, Eaton Socon, St. Neots.
1252	1885, Feb. 9	*PETO, JAMES WINDER . . .	6, Market Place, Reading, Berks.
428	1876, Feb. 21	PHILLIPS, FREDERICK HAMILTON	{ Glamorganshire County Roads Surveyor's Office Ely, near Cardiff.
1043	1884, Jan. 14	PICKERING, WILLIAM CLOVES . . .	Ivy House, Whitford, Holywell, N. Wales.
651	1881, Dec. 19	PICKSTOCK, JOHN . . .	Castle Hill, Winchester, Hants.
1617	1889, Apr. 1	PIERSON, CHARLES . . .	10, Marsden Street, Pall Mall, Manchester,
968 {	A. '83, May 25 F. '86, Dec. 6	*PILDITCH, PHILIP EDWARD . . .	17, Parliament Street, S.W.
1196	1884, May 26	POLLARD, HARRY EMANS . . .	14, Duke Street, Adelphi, W.C.
997	1883, Dec. 17	POPPELWELL, WILLIAM WILLOTT	{ Victoria Chambers, Southampton Building W.C., and Imperial Chambers, Derby.
699	1882, Jan. 16	PORTER, ALFRED . . .	109, Grange Road, Bermondsey, S.E.
558	1880, Jan. 5	POTTS, JOSEPH, JUN. . . .	North Cliff, Roker, Sunderland.
224	1870, Jan. 24	POUNDLEY, JOHN EDWARD . . .	Black Hall, Kerry, Newtown, Montgomeryshire
487	1877, May 14	POWELL, EVAN	Broomcliffe, Llanidloes, Montgomeryshire.
842 {	A. '74, Feb. 16 F. '80, Nov. 22	POWELL, REGINALD HENRY . . .	St. Swithun's Lane, High Street, Lewes, Sussex
490	1877, Dec. 10	POWNALL, GEORGE HARRY . . .	29, Parliament Street, S.W.
1273	1885, Nov. 9	PUNCHARD, FREDERICK . . .	{ Underley Estate Office, Kirkby Lonsdale, West moreland.
1080 {	A. '84, Jan. 28 F. '89, Jan. 28	PURCHASE, EDWARD KEYNES . . .	{ Mansion House Chambers, 11, Queen Victor Street, E.C.
1224	1884, Dec. 8	PYM, GEORGE EDWIN . . .	Doods. Reigate, Surrey.
796	1882, Apr. 24	RABY, JOSEPH WALKER . . .	78, Cross Street, Manchester.
625	1881, Nov. 14	RABY, WILLIAM	78, Cross Street, Manchester.
1515	1888, Dec. 10	RADFORD, WILLIAM	1, Princess Street, Manchester.
1462	1888, Feb. 20	RAIKES, COLONEL GEORGE WHITTINGTON	{ Ragley Estate Office, Alcester, Redditch.
902	1883, Feb. 26	RAWLENCE, ERNEST ALFRED . . .	Tower House, Salisbury.
231	1870, Feb. 7	RAWLENCE, JAMES	Salisbury, Wilts.
134	1868, Oct. 26	RAYNBIRD, HUGH EDWARD . . .	Basingstoke, Hants.
1516	1888, Dec. 10	REA, JOHN MARCUS BEAUMONT.	{ 8, Winckley Street, Preston, and Lytham Lancashire.
1139	1884, Apr. 21	READ, GEORGE HUNTLY . . .	27, Albany Street, N.W.
839	1882, Dec. 18	REDDALL, DAVID GADSDEN . . .	10, South Street, Finsbury, E.C.
584	1880, Dec. 13	REES, WILLIAM ANDREW . . .	7, Cornhill, E.C.
544	1879, Apr. 23	REES, WILLIAM GEORGE . . .	Holly House, Newport, Monmouthshire.
1044	1884, Jan. 14	REEVES, BENJAMIN AUSTEN . . .	27, Chancery Lane, W.C.
929 {	A. '83, Apr. 16 F. '89, Jan. 28	REID, FRANCIS	Bucksford, Ashford, Kent.
514	1878, Nov. 11	REID, PATRICK SANDEMAN . . .	20, John Street, Adelphi, W.C.
937	1883, April 30	RENDELL, ARTHUR STEPHEN . . .	Market Terrace, Newton Abbot.

3. Date of Election
and of Transfer.

FELLOWS.

2	{ A. '69, Feb. 8 F. '82, Feb. 13 }	REX, WILLIAM	{ 27, Chancery Lane, W.C., and 311, Kentish Town Road, N.W.
3	{ A. '76, May 8 F. '81, Dec. 6 }	RICH, ROBERT	Didcot, Berks.
10	1883, Feb. 12	RICHARDS, ALFRED	8, New Broad Street, E.C.
17	1884, May 26	RICHARDS, HENRY BRINLEY	20, Coleman Street, E.C.
31	1876, Dec. 18	RICHARDSON, JOHN	Methley Park, Leeds.
38	1873, Feb. 10	RICKMAN, THOMAS MILLER (Member of Council)	8, Montague Street, Russell Square, W.C.
4	1883, April 2	RIDDLE, FREDERICK HENRY BRIMBLE	{ 15, Dornton Road, Balham, S.W.
24	{ A. '82, Jan. 30 F. '83, Jan. 29 }	RIGDEN, HENRY WILLIAM	Salisbury, Wilts.
14	1888, Jan. 28	RIGDEN, JOHN LAMBE	{ Natal Government Buildings, Maritzburg, Natal, South Africa, and Belle Vue, Salisbury.
17	1888, Dec. 10	RIGHTON, EDWARD GRANTHAM	High Street, Evesham, Worcestershire.
20	1868, Aug. 17	ROBERTS, RICHARD	42, New Broad Street, E.C.
15	1888, Jan. 28	ROBINS, EDWARD	Dominica, West Indies.
72	1868, Jul. 13	ROBINS, EDWARD COOKWORTHY	46, Berners Street, Oxford Street, W.
38	1881, Jan. 24	ROBINS, WILLIAM HENRY	82A, New Street, Birmingham.
50	1887, Jan. 10	ROBINSON, CHARLES EDWARD	36, Coleman Street, E.C.
18	1881, Apr. 4	ROBINSON, HENRY	9, Victoria Street, S.W.
10	1882, May 8	ROBINSON, NATHANIEL WISHART	Marlowes, Hemel Hempstead, Herts.
91	1872, Dec. 9	ROBSON, EDWARD ROBERT	{ Palace Chambers, 9, Bridge Street, S.W., and 2, The Paragon, Blackheath, S.E.
53	1888, Feb. 6	RODERICK, JOHN	2, Temple Row West, Birmingham.
2	1881, Jan. 24	ROGERS, EDWARD PHIPPARD GEORGE	{ 18, Borough High Street, S.E.
25	1882, Dec. 4	ROGERS, ERNEST EDWARD	1, Prince of Wales Road, Norwich.
25	1884, Dec. 8	ROGERS, WILLIAM BENNETT	78, Gloucester Road, South Kensington, S.W.
70	1889, Jan. 28	ROKER, MITCHEL JOHN	Bank Chambers, Bournemouth.
61	{ A. '74, Dec. 7 F. '76 Jan. 24 }	ROLLESTON, JOHN FOWKE LANCELOT	{ Grey Friars, Leicester.
69	{ A. '83, May 25 F. '89, Jan. 28 }	*†ROLLESTON, WILLIAM GUSTAVUS STANHOPE	{ Grey Friars, Leicester.
44	{ A. '86, Dec. 6 F. '87, Nov. 14 }	*§ROODS, ALFRED	{ The School Board for London, Victoria Embank- ment, W.C.
80	{ A. '83, Nov. 12 F. '87, Jan. 10 }	ROPER, WILLIAM	Lansdowne Place, Tunbridge Wells, Kent.
83	1888, Apr. 30	ROSE, THOMAS	13, Bank Street, Norwich.
25	1868, Aug. 31	ROSSER, WILLIAM	Llanelly, Carmarthen.
107	1878, Apr. 8	ROWE, RICHARD REYNOLDS	Park House, Cambridge.
123	{ A. '83, Dec. 17 F. '89, Feb. 25 }	RÜNTZ, ERNEST AUGUSTUS	22, Moorgate Street, E.C.
115	{ A. '73, Dec. 8 F. '75, Nov. 8 }	RUSHWORTH, EDMUND WALTER	22, Savile Row, W.
261	1885, Mar. 9	RUTHERFORD, JAMES	Kirk-leatham, Redcar, Yorkshire.
547	1889, Jan. 14	RUTHERFORD, JAMES AUGUSTINE	Estate Office, Highclere Park, Newbury.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
998	1883, Dec. 17	RUTLEY, CHARLES	11, Dowgate Hill, E.C.
466	{ A. '76, Dec. 8 } { F. '80, Nov. 8 }	RYDE, ARTHUR LYON	29, Great George Street, S.W.
16	1868, Jun. 15	RYDE, EDWARD (Past-President)	29, Great George Street, S.W.
421	1876, Jan. 24	SADLER, GEORGE WILLIAM . .	467, High Street, Cheltenham.
256	1871, Feb. 13	ST. QUINTIN, PERRY. . . .	37, Threadneedle Street, E.C.
1518	1888, Dec. 10	SALTER, WILLIAM HERBERT .	The Hall, Attleborough, Norfolk.
1486	1888, Jan. 9	SAMPLE, THOMAS	Bothal Castle, near Morpeth, Northumberland.
1519	1888, Dec. 10	SAMPSON, GEORGE	Beauchief Abbey, Sheffield.
1384	1887, Mar. 21	SAMUEL, WILLIAM JOHN . .	Newport Pagnell, Bucks.
397	1875, Apr. 26	SANDAY, GEORGE HENRY . .	Langdale Lodge, Adkin Road, Clapham Park, S.W.
741	1882, Feb. 13	SANDERS, THOMAS	Cheltenham.
458	1876, Nov. 27	SANDY, HENRY	Newport Road, Stafford.
167	1869, Feb. 8	SAUNDERS, CECIL GEORGE . .	5, Agar Street, Strand, W.C.
177	1869, Feb. 22	SAUNDERS, EDWARD	6, Bishopsgate Street Without, E.C.
121	1868, Aug. 17	SAVILL, ALFRED	39, New Broad Street, E.C., and Chigwell, Essex.
782	{ A. '82, Mar. 13 } { F. '89, Mar. 18 }	SAVILL, ALFRED, JUN. . . .	39, New Broad Street, E.C.
526	1879, Jan. 6	SCARGILL, ALFRED	11, East Parade, Sheffield.
338	1874, Feb. 2	SCARTH, WILLIAM T. . . .	Raby Castle, Darlington.
1385	1887, Mar. 21	SCOTT, HENRY LACY	Bury St. Edmund's, Suffolk.
629	{ A. '81, Dec. 5 } { F. '82, Apr. 24 }	SCOVELL, JOHN	Oulton Park, Tarporley, Cheshire.
755	{ A. '82, Feb. 13 } { F. '89, Mar. 4 }	SCRIVEN, CHARLES HERBERT .	Oakley House, Scole, Norfolk.
534	1879, Mar. 3	SELBY, CHARLES FREDERIC . .	19, Queen Anne's Gate, S.W.
828	{ A. '82, Nov. 13 } { F. '86, May 3 }	SEYMOUR, RICHARD ARTHUR } HAMILTON }	Preston Hall Farm, Aylesford, Kent.
390	1875, Mar. 1	SHACKEL, GEORGE	12, The Forbury, Reading, Berks.
431	1876, Mar. 6	SHAW, JOHN (Member of Council.)	College Place, Derby.
999	1883, Dec. 17	SHEPPARD, OSBORNE	Glynelydach, Neath.
1316	1886, May 3	SHERWIN, JOHN LESTER . . .	80, Coleman Street, E.C.
706	{ A. '82, Jan. 16 } { F. '87, Dec. 5 }	SHERWIN, JOSEPH HENRY . .	16, Whitehall Place, S.W.
474	{ A. '77, Jan. 29 } { F. '80, Nov. 8 }	SHOPPEE, CHARLES HERBERT .	22, John Street, Bedford Row, W.C.
74	1868, Jul. 13	SHOPPEE, CHARLES JOHN . . (Vice-President)	61, Doughty Street, W.C.
604	{ A. '81, Jan. 24 } { F. '83, May 21 }	*SILCOCK, THOMAS BALL. . .	Octagon Chambers, Milsom Street, Bath.
720	1882, Jan. 30	SIMMONDS, FREDERICK . . .	Parkside, Englefield Green, Surrey.
908	1883, Feb. 26	SIMMS, WALTER	27, Albany Street, N.W.
1486	1888, May 14	SIMPSON, ROBERT THOMAS . .	Horsecroft, Bury St. Edmunds, Suffolk.
282	1872, Apr. 22	SLATER, GEORGE. . . .	Canterbury.
598	{ A. '80, Dec. 12 } { F. '88 April, 80 }	SMALLPEICE, GEORGE BAKER .	9 and 10, Tokenhouse Yard, E.C., and Guildford.
135	1868, Oct. 26	SMELLIE, THOMAS DAVIES . .	209, St. Vincent Street, Glasgow.

<i>Rep. No.</i>	<i>Date of Election and of Transfer.</i>	FELLOWS.	
122	1868, Aug. 17	SMITH, CHARLES BOVILL	Wickham, Hants.
238	{ A. '70, Mar. 21 F. '78, Mar. 11 }	SMITH, CHARLES JOHN	16, Whitehall Place, S.W.
626	1889, May 13	SMITH, EDWARD	54, Amwell Street, E.C.
484	1888, Apr. 30	SMITH, FRANK	37, Cannon Street, Birmingham.
454	{ A. '76, May 8 F. '81, Dec. 6 }	SMITH, HENRY	8, John Street, Adelphi, W.C.
400	{ A. '75, Apr. 26 F. '81, Jan. 24 }	SMITH, HENRY HERBERT	Chippenham, Wilts, and 7, Whitehall Place, S.W.
487	1888, May 14	SMITH, JOHN THOMPSON	Tattondale, Knutsford, Cheshire.
955	1883, May 25	SMITH, JOSEPH	15, Cheapside, Bradford, Yorkshire.
894	{ A. '83, Feb. 12 F. '89, Feb. 25 }	SMITH, WHEATER	17, Hampton Place, Bradford.
256	1885, Feb. 23	*SMITH, WILLIAM	{ Upper Farm, Abbot's Salford, Evesham, Wor- cestershire.
708	{ A. '82, Jan. 16 F. '86, Mar. 8 }	SMITH-RYLAND, CHARLES ALSTON	15, Waterloo Street, Birmingham.
1872	1887, Feb. 21	SMYTH-RICHARDS, GEORGE COB- LEY	{ Wistlandpound, and 6, Castle Street, Barnstaple, Devon.
1491	1888, Nov. 12	SNELLING, HENRY	19 and 20, Walbrook, E.C., and Sidcup, Kent.
146	1868, Nov. 9	SOUTHWELL, CHARLES JOSIAH	9, Whitehall Place, S.W.
96	1868, Jul. 27	SPACKMAN, HENRY	6, Terrace Walks, Bath.
1107	1884, Feb. 25	SPURLING, HENRY	81, Prince's Street, Ipswich, Suffolk.
42	1868, Jun. 15	SQUAREY, ELIAS PITTS (President)	{ The Moot, Downton, Salisbury, and 22, Great George Street, S.W.
1067	1881, Jan. 28	SQUIRE, RICHARD	2, Pont Street, Belgrave Square, S.W.
1277	1885, Dec. 7	STACEY, HARRIE	Station Road, Redhill, Surrey.
1268	1885, May 4	STAFFORD, ROBERT BARRY	83, High Street, Bedford.
840	1882, Dec. 18	STANGER, CALEB	21, Finsbury Pavement, E.C.
1437	1888, Jan. 9	STANLEY-DODGSON, STANLEY DICKINSON	{ Estate Office, Somerset House, Whitehaven, Cumberland.
43	1868, Jun. 15	STATTER, THOMAS	Standhall, Whitefield, Manchester.
469	1877, Jan. 15	STENNING, ALEXANDER ROSE	121, Cannon Street, E.C.
529	{ A. '79, Jan. 6 F. '82, Nov. 13 }	STEPHENSON, CHARLES WILLIAM	38, Parliament Street, S.W.
1198	1884, May 26	STEVENS, WILLIAM CHARLES	22, Savile Row, W.
97	1868, Jul. 27	STEWART, HERBERT THOMAS	45, Parliament Street, S.W.
938	1888, April 30	STOCK, HENRY	9, Denman Street, London Bridge, S.E.
654	1881, Dec. 19	STONER, ALFRED	8, Blomfield Street, E.C.
1599	1889, Mar. 4	STOOKE, JAMES	Courtenay Street, Newton Abbot, Devon.
1108	1884, Feb. 25	STRUDWICK, HAYWARD JAMES	{ Montague Chambers, 10 & 11, Bedford Street, Strand, W.C.
655	1881, Dec. 19	STRUDWICK, WILLIAM HENRY	14, Parliament Street, S.W.
1488	1888, May 14	STUDDY, THOMAS EDWARD	Leckford Down, Stockbridge, Hants.
87	1868, Jul. 20	STURGE, ROBERT FOWLER	34, Corn Street, Bristol.
18	1868, Jun. 15	STURGE, WILLIAM (Past-President)	34, Corn Street, Bristol.
1278	1885, Dec. 7	SWETTENHAM, WILLIAM NORMAN	The Old School House, Shrewsbury.
1257	1885, Feb. 23	SWORDER, HUGH	High Street, Epping, Essex.
1068	1884, Jan. 28	SYMONS, PHILIP	Fore Street, Totnes, Devon.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
1317	1886, May 8	TANNER, HENRY	H.M. Office of Works, Whitehall Place, S.W.
1092	1884, Feb. 11	TANNER, JAMES MELHUISE . .	Wembworthy, North Devon.
1115	{ A. '84, Feb. 25 } { F. '88, Dec. 10 }	TANNER, WILLIAM	Lynhurst, Newport, Monmouthshire.
283	{ A. '70, Feb. 7 } { F. '78, Jan. 28 }	TATHAM, GEORGE HENRY . .	25, Bucklersbury, E.C.
1364	1887, Jan. 24	TAYLOR, EDWARD FERGUSSON .	New Barnet, Herts, and 55, Chancery Lane, W.C.
678	{ A. '81, Dec. 19 } { F. '87, Feb. 7 }	TAYLOR, JOHN WILLIAM . .	33, Westgate Road, Newcastle-on-Tyne.
1069	1884, Jan. 28	TEWSON, EDWARD	80, Cheapside, E.C.
859	{ A. '82, Dec. 18 } { F. '85, Jan. 12 }	TEWSON, EDWARD ARTHUR . .	80, Cheapside, E.C.
924	1883, April 16	THEOBALD, HENRY WELLS DEW- HURST }	110, Great Russell Street, W.C.
329	1874, Jan. 19	THOMAS, JOSIAH	Athenæum Chambers, Nicholas Street, Bristol.
841	1882, Dec. 18	THOMPSON, ARTHUR EDWARD .	Leadenhall Buildings, E.C.
656	1881, Dec. 19	THOMPSON, EDWARD JAMES . .	The Willows, Moss Lane, Timperley, Manchester.
1829	1886, Dec. 6	THOMSON, WILLIAM CUNNINGHAM	Estate Office, Connington, Peterborough.
1473	1888, Mar. 19	THORNE, ARNOLD	Cross Street, Barnstaple, Devon.
1000	1888, Dec. 17	THORPE, WILLIAM	Nailstone, Hinckley.
657	1881, Dec. 19	THURGOOD, HERBERT JOHN . .	27, Chancery Lane, W.C.
1623	1889, Apr. 29	THURGOOD, WILLIAM HENRY .	22, Great George Street, S.W.
591	{ A. '80, Dec. 13 } { F. '87, Nov. 14 }	THURNALL, JOHN EDWARD . .	Royston, Herts.
494	1878, Jan. 14	THURSFIELD, THOMAS HOWELLS	Barrow, Brosely, Shropshire.
45	1868, Jun. 15	THYNNE, EDWARD LEWIS . .	11, Great George Street, S.W.
155	1869, Jan. 11	THYNNE, FREDERICK GEORGE .	11, Great George Street, S.W.
1070	1884, Jan. 28	THYNNE, GUY HARRY	11, Great George Street, S.W.
1297	{ A. '86, Jan. 11 } { F. '89, Mar. 18 }	*† TIPPEN, JOHN HENRY . . .	Conservancy Buildings, Hull.
742	1882, Feb. 18	TIPPEN, JOSEPH	Conservancy Buildings, Hull.
1373	1887, Feb. 21	TINDALL, CHARLES WILLIAM .	Scawby, Brigg, Lincolnshire.
1241	1885, Jan. 12	TODD, WILLIAM HENRY . . .	County Buildings, Hull.
376	1875, Jan. 18	TOLLEY, JAMES	66, Cannon Street, E.C.
1438	1888, Jan. 9	TOMLINSON, THOMAS	Estate Office, Alnwick Castle, Northumberland.
1600	1889, Mar. 4	TOMPSETT, WILLIAM ROBERT	{ Stone Castle Farm, Paddock Wood, Kent, and 182, High Street, Tonbridge.
766	1882, Feb. 27	TOOTELL, CHARLES	13, King Street, Maidstone, Kent.
767	1882, Feb. 27	TOOTELL, JOSEPH	13, King Street, Maidstone, Kent.
478	1877, Jan. 29	TOOTELL, RICHARD WILLIAM .	11, Queen Victoria Street, E.C.
447	1876 Apr. 24	TOWER, BROWNLOW RICHARD CHRISTOPHER }	Bridgewater Estate Office, Ellesmere, Salop.
972	{ A. '83, May 25 } { F. '85, Dec. 6 }	*† TREADWELL, HENRY JOHN .	2, Waterloo Place, Pall Mall, S.W.
1001	1883, Dec. 17	TRETHERY, HENRY	Silsoe, Ampthill, Beds.
1292	1886, Jan. 11	TRIST, JOHN WILLIAM . . .	62, Old Broad Street, E.C.
855	1874, May 11	TROLOPE, CHARLES BROWN . .	13, Parliament Street, S.W.
1140	1884, Apr. 21	TROUTBECK, ROBERT	Maidstone, Kent.

Date of Election and of Transfer.		FELLOWS.	
2	1868, Jan. 15	TRUMPER, RICHARD	23, Lincoln's Inn Fields, W.C.
0	1868, Aug. 3	TUCKETT, PHILIP DEBELL	10A, Old Broad Street, E.C.
1	1878, Dec. 9	TUNLEY, GEORGE	36, Finsbury Circus, E.C.
9	1884, May 26	TURNBULL, THOMAS JOHN	Wimborne St. Giles, near Cranborne, Dorset.
5	1888, Nov. 12	TURNER, CHARLES	Oakhurst, East Grinstead, Sussex.
4	1883, Feb. 26	TURNER, FREDERICK JOHN	Mansfield-Woodhouse, Mansfield, Notts.
1	1884, Jan. 28	TURNER, JOHN	The Grange, Ulceby, Lincolnshire.
0	1888, Dec. 10	TURNER, THOMAS WARNER	Welbeck Abbey, Worksop, Notts.
8	1869, Feb. 8	TURNER, WILLIAM	1, Butter Market, Ipswich, Suffolk.
8	1879, May 12	TURNER, WILLIAM WEBB	9, Clinton Place, Seaford, Sussex.
6	1885, Jan. 26	TURNOR, EXSUPERIUS WESTON	The Green, Stafford.
1	1889, Jan. 28	USHER, ALFRED	Belize, British Honduras.
5	1888, Feb. 26	VAIZEY, JOHN GEORGE	{ Bocking, Braintree, Essex, and 44, Bedford Row, W.C.
7	1889, May 13	VAWSER, ROBERT	17, Cooper Street, Manchester.
2	1883, Dec. 17	VEEVERS, RICHARD	Woningworth, Fulwood Park, Preston.
9	{ A. '78, Dec. 8 } { F. '78, Nov. 11 }	VENABLES, FREDERICK	60, Chancery Lane, W.C.
9	1876, Feb. 21	*VERNON, ARTHUR	{ Borshams, High Wycombe, Bucks; and 26, Great George Street, Westminster. S.W.
3	1880, Mar. 1	*VERNON, WALTER LIBERTY	{ 4, Trinity Street, Hastings; 26, Great George Street, S.W.; and Bank of Australasia Cham- bers, George Street, Sidney, New South Wales.
6	1882, May 22	VIDLER, JAMES COLEMAN	Rye and Hastings, Sussex.
8	1876, Jan. 10	VIGERS, ASTLEY	4, Frederick's Place, E.C.
8	1871, Dec. 4	VIGERS, EDWARD, JUN. . . .	38, Parliament Street, S.W.
20	1868, Jun. 15	VIGERS, FRANCIS	4, Frederick's Place, E.C.
		(Vice-President)	
98	{ A. '78, Jan. 23 } { F. '83, Nov. 12 }	VIGERS, LESLIE ROBERT	4, Frederick's Place, E.C.
4	{ A. '80, Dec. 13 } { F. '85, Nov. 9 }	VIGERS, MARTIN	52, Queen Victoria Street, E.C.
46	1868, Jun. 15	VIGERS, ROBERT	4, Frederick's Place, E.C.
		(Member of Council)	
96	1888, Nov. 12	VILLAR, JAMES	1A, Cambray, Cheltenham.
01	1889, Mar. 4	WACHER, THOMAS	Upper Bridge Street, Canterbury, Kent.
12	1882, Dec. 18	WADE, JOHN	10, Pitt Street, Barnsley.
18	1889, Apr. 1	WAGSTAFFE, THOMAS ROGERS	{ 291, Clapham Rise, S.W., and 109, Leadenhall Street, E.C.
58	1881, Dec. 19	WAINWRIGHT, CHARLES RAWLINSON	Shepton Mallet, Somerset.
13	1882, Dec. 18	WAINWRIGHT, CHARLES RAW- LINSON, JUN. . . .	{ Shepton Mallet, Somerset.
96	1883, Feb. 26	WAISTELL, WILLIAM	{ Barnard Castle, Durham, and 6, Arden Street, Darlington.

Dip. No.	Date of Election and of Transfer.	FELLOWS.	
1392	1887, May 9	WALCOTT, LYONS RODEN SYMPSON	1, Gray's Inn Place, W.C.
1098	1884, Feb. 11	WALKER, EDWARD ROBINSON	31, John Street, Bedford Row, W.C.
743	1882, Feb. 13	WALKER, HERBERT	Newcastle Chambers, Angel Row, Nottingham.
659	1881, Dec. 19	WALKER, SAMUEL	22, Moorgate Street, E.C.
1072	1884, Jan. 28	WALL, GEORGE YOUNG	Exchequer Buildings, Durham.
1178	1884, May 19	WALLACE, HENRY	Trench Hall, Gateshead-on-Tyne, Co. Durham.
1455	1888, Feb. 6	WALLINGTON, JOHN ARTHUR BEACH	} Basingstoke, Hants.
785	1882, Mar. 27	WALMISLEY, ARTHUR THOMAS	
1407	1887, Dec. 19	WARD, DANIEL	Hewton, Beerferris, Devon.
1469	1888, Mar. 5	WARD, FRANK	Burnville, Bridestowe, North Devon.
925	1883, April 16	WARD, JOHN GEORGE RODNEY	Yatton Court, near Leominster, Herefordshire.
660	1881, Dec. 19	WARE, CHARLES EDWIN	Gandy Street Chambers, Exeter.
1141	1884, Apr. 21	WARING, CHARLES EDWARD	1, Charles Street, Crockherbtown, Cardiff.
162	1869, Jan. 25	WARING, THOMAS	1, Charles Street, Crockherbtown, Cardiff.
189	{ A. '69, Mar. 8 } { F. '75, Apr. 12 }	WARNER, WILLIAM HENRY	130, Mount Street, Grosvenor Square, W.
874	1883, Jan. 29	WATERMAN, JAMES	Ashford, Kent.
1109	1884, Feb. 25	WATERMAN, RICHARD	20, Week Street, Maidstone, Kent.
758	{ A. '82, Feb. 13 } { F. '87, Mar. 7 }	WATERS, WILLIAM RICHARD	33, Marmora Road, Honor Oak, S.E.
1101	{ A. '84, Feb. 11 } { F. '89, Mar. 4 }	WATKINS, ROBERT ARUNDEL	Castle Combe, Chippenham, Wilts.
47	1868, Jun. 15	WATNEY, DANIEL	33, Poultry, E.C.
(Member of Council)			
951	{ A. '83, May 21 } { F. '87, Feb. 21 }	WATNEY, WALTER DANIEL	33, Poultry, E.C.
574	1880, Mar. 1	WATSON, HERBERT EDWARD	New Grove, Petworth, Sussex, and Clifton, Yor.
797	1882, Apr. 24	WATSON, JOHN	Shirburn Castle, Tetworth, Oxon.
1456	1888, Feb. 6	WATT, ALEXANDER	Princetown, Devon.
467	{ A. '76, Dec. 18 } { F. '79, Nov. 10 }	WATTS, CHARLES	26, Bedford Row, W.C.
1008	1883, Dec. 17	WATTS, JAMES	Broad Street, Wokingham, Berks.
284	1872, May 6	WEALL, JOHN	38, High Street, Watford.
1045	1884, Jan. 14	WEATHERALL, HENRY	22, Chancery Lane, W.C.
700	1882, Jan. 16	WEAVER, WILLIAM	Town Hall, Kensington, W.
215	1869, Dec. 6	WEBB, GEORGE	Tunstall, Sittingbourne, Kent.
1478	1888, Apr. 16	WEBSTER, ALEXANDER	{ 100, Highgate, and 9, Cliff Terrace, Kend. Westmoreland.
661	1881, Dec. 19	WELLSTED, WILLIAM HENRY	Manor Street, Hull.
744	1882, Feb. 13	WESTBURY, GEORGE HENRY	The Knoll, Andover, Hants.
88	1868, Jul. 20	WESTBURY, GILES	Andover, Hants.
1454	1883, Feb. 6	WHALLEY, HENRY SHAW	90, Northgate Street, Chester.
779	1882, Mar. 13	WHARTON, THOMAS GEORGE	1, Basinghall Street, E.C.
1266	1885, Apr. 20	WHITAKER, GEORGE	32, Craven Street, W.C.
745	1882, Feb. 13	WHITE, JOHN	Warrington, Lancashire.
701	1882, Jan. 16	WHITELEY, CHARLES PERRY	82, Queen Street, E.C.

ip. No.	Date of Election and of Transfer.	FELLOWS.	
350	1874, Apr. 27	WIDNELL, FREDERICK GRAINGER	13, Parliament Street, S.W.
234 {	A. '70, Feb. 7 } F. '76, Nov. 13 {	WIGRAM, JOHN	South Collingham, Newark, Notts.
721	1882, Jan. 30	WILKINSON, GEORGE AYSCOUGH	7, Poultry, E.C.
226	1884, Dec. 8	WILKINSON, THOMAS	168, North Street, Brighton.
916	1883, April 2	WILKINSON, WILLIAM	St. Stephen's Chambers, Telegraph Street, E.C.
242	1885, Jan. 12	WILKS, RICHARD	Little Mongeham, near Deal, Kent.
094	1884, Feb. 11	WILLIAMS, JOHN	Gwernhefin, Bala, North Wales.
240	1870, May 9	WILLIAMS, STEPHEN WILLIAM .	Rhayader, Radnorshire.
568 {	A. '80, Jan. 19 } F. '88, Apr. 16 {	WILLIAMS, WILLIAM HERBERT.	Llandaff, Cardiff.
116	1868, Aug. 10	WILLMOT, FRANCIS	6, Waterloo Street, Birmingham.
593	1889, Feb. 25	WILLMOT, GEORGE DYOTT . . .	6, Waterloo Street, Birmingham.
807 {	A. '82, Apr. 24 } F. '87, May 9 }	WILLMOT, JOHN	6, Waterloo Street, Birmingham.
004	1883, Dec. 17	WILSON, JACOB	{ 5, Great George Street, S.W. and Chillingham, Alnwick.
662	1881, Dec. 19	WILSON, THOMAS SILK	Albert Square, Manchester.
150 {	A. '84, Apr. 21 } F. '88, Mar. 19 }	WINDER, GEORGE ALEXANDER.	{ Escot Estate Office, Fairmile, Ottery St. Mary, Devon.
844	1882, Dec. 18	WING, WILLIAM	Caversham, Reading.
48	1868, Jun. 15	WITHALL, RICHARD AUGUSTUS .	29, Great George Street, S.W.
50	1868, Jun. 15	WOOD, FREDERICK	34, Regency Square, Brighton.
1474	1888, Mar. 19	WOOD, JOHN DANIEL	19, Mount Street, W.
1258	1885, Feb. 23	WOOD, WILLIAM	Ifield Court, Crawley, Sussex.
663	1881, Dec. 19	WOODS, HENRY	19 & 20, Walbrook, E.C.
845	1882, Dec. 18	WOODHAMS, JAMES	50 Havelock Road, Hastings.
613	1881, Feb. 21	WOOLLEY, REGINALD.	{ Silver Street, Lincoln, and South Collingham, Newark, Notts.
427 {	A. '76, Feb. 7 } F. '80, Nov. 8 }	WOOLLEY, THOMAS CECIL SMITH	South Collingham, Newark, Notts.
267 {	A. '71, Nov. 13 } F. '77, Jan. 29 }	WOOLLEY, WILLIAM EDWARD .	Loughborough, Leicestershire.
680 {	A. '81, Dec. 19 } F. '87, Jan. 10 }	WREATHALL, ROBERT T. . . .	{ 30, Walbrook, E.C., and Manor House, Green- hill, Harrow.
1200	1884, May 26	WRIGHT, JAMES	Irongate, Derby.
1521	1888, Dec. 10	WRIGHT, THOMAS	Post Office Terrace, Cambridge.
292	1872, Dec. 9	WRIGHT, WILLIAM EDWARD .	King's Lynn, Norfolk.
283	1872, Apr. 22	WRIGHT, WILLIAM	Wollaton, Nottinghamshire.
722	1882, Jan. 30	WYATT, OLIVER NEWMAN . . .	East Street, Chichester.
1120	1884, Mar. 10	WYLEY, HENRY JAMES	Bridgnorth, Shropshire.
1227	1884, Dec. 8	WYLEY, WILLIAM JOHN	2, School Chambers, Shrewsbury.
430	1876, Feb. 21	YEOMAN, GEORGE DUNDAS . . .	Bedford, Bedfordshire.

Professional Associates.

The names of those Professional Associates who have qualified for the Class by Examination are distinguished thus *

The names of those Professional Associates who have further qualified by Examination for, but have not yet been transferred to, the Class of Fellows are distinguished thus ¶

Diploma Number.	Date of Election.		
1439	1888, Jan. 9	*ADKIN, BENIAH WHITLEY . . .	33, Walbrook, E.C.
1280	1885, Dec. 7	*=ARNOTT, JOHN	Church Street, Woodbridge, Suffolk.
1408	1887, Dec. 19	*AUSTIN, RICHARD, JUN.. . .	Bishop's Waltham, Hants.
798	1882, Apr. 24	AYRES, CHARLES PRYOR . . .	Gresham Lodge, Watford, Herts.
665	1881, Dec. 19	BAILEY, LEONARD	Estate Office, Scorton, Garstang, Lancashire.
1281	1885, Dec. 7	*BAKER, CECIL CAUTLEY. . . .	21, Bedford Row, W.C.
553	1879, Dec. 8	BALDING, ALBERT	Barkway, Herts.
1522	1888, Dec. 10	*BALL, JAMES BENJAMIN. . . .	The Glen, West Cowes, Isle of Wight.
1111	1884, Feb. 25	BALLARD, WILLIAM WASHINGTON	9, Craig's Court, Charing Cross, S.W.
1247	1885, Jan. 26	*BARRATT, HARRY.	Middle Street, Stourbridge, Worcestershire.
1409	1887, Dec. 19	*BATEMAN, ARTHUR CHARLES . .	Oriel House, Witney, Oxon.
622	1881, May 16	BEADEL, HENRY GRANT.	97, Gresham Street, E.C.
1282	1885, Dec. 7	*¶BEARD, EDWIN THOMAS . . .	The Colonial College, Hollesley Bay, Suffolk.
148	1868, Nov. 9	BEAUCHAMP, CHARLES DAVIE . .	9, Whitehall Place, S.W.
1594	1889, Feb. 25	*BELCHER, EDWARD JOHN . . .	Wantage, Berks.
1212	1884, Nov. 10	*¶× BENSON, ROBERT ALAN. . .	Duchy of Cornwall Office, Buckingham Gate, S.W.
383	1875, Feb. 1	BIDWELL, SHELFORD	Estates Office, Drayton Manor, Tamworth.
1330	1886, Dec. 6	*¶BIRCH, WALTER DE HOGHTON	Kerry, Montgomeryshire.
876	1883, Jan. 29	BISHOP, REGINALD GEORGE . . .	2, Godliman Street, Doctors' Commons, E.C.
1283	1885, Dec. 7	*BLUNDELL, HARRY	Cauldon Place, Shelton, Stoke-upon-Trent.
1158	1884, May 5	BLUNT, HERBERT ARTHUR SCAWEN	Bell Street, Reigate, Surrey.
768	1882, Feb. 27	BOA, ANDREW.	Great Thurlow, Newmarket, Suffolk.
1159	1884, May 5	BOND, FREDERICK GEORGE . . .	Old Bank House, Ipswich.
542	1879, Mar. 31	BOODLE, FRANCIS EDWARD . . .	Rolls Chambers, 89, Chancery Lane, W.C.
846	1882, Dec. 18	*BOOTH, JOHN FREDERICK . . .	25, Windle Street, St. Helen's, Lancashire.
1331	1886, Dec. 6	*BOUSFIELD, EDWIN VAUGHAN } DAVENPORT	99, Gresham Street, E.C.
1523	1888, Dec. 10	*BOWER, ARTHUR WENTWORTH } CHIVERS	The Hall, Wainfleet, Lincolnshire.
1524	1888, Dec. 10	*BRADY, RALPH HOLLINSHED . .	17, Warren Street, Stockport, Cheshire.
1374	1887, Feb. 21	*BRIGGS, JOHN	London County Council, Spring Gardens, S.W.
1073	1884, Jan. 28	BROWN, ALEXANDER	Home Farm, Hothfield, Ashford.

× Bracketted Second Prize, 1884.

= Second Prize, 1885.

9. Date of Election. PROFESSIONAL ASSOCIATES.

17	1882, Dec. 18	BROWN, WILLIAM ARTHUR . . .	146, Goswell Road, E.C.
10	1887, Dec. 19	*BROWN, WILLIAM EDWARD . . .	Reading Villa, Denmark Road, Watford, Herts.
42	1884, Apr. 21	BROWNE, FLINT	73, Cheapside, E.C.
46	1884, Jan. 14	BRUCE, ROBERT KNIGHT . . .	Mentmore, Leighton Buzzard, Bucks.
44	1883, May 21	BUCKLAND, WILLIAM THOMAS . .	9, Whitehall Place, S.W.
32	1886, Dec. 6	*BURROWS, ALFRED JOHN . . .	41, Bank Street, Ashford, Kent.
11	1887, Dec. 19	*BUSHELL, HENRY	1, Finsbury Circus, E.C.
12	1887, Dec. 19	*BUSS, FLEETWOOD GEORGE } WILLIAM.	37, South Hill Park, Hampstead, N.W.
60	1884, May 5	BUTTERWORTH, JOSIAH	Mansfield, Notts.
33	1886, Dec. 6	*CALLENDAR, WILLIAM JACKSON	Post Office, Maryborough, Queensland, Australia.
34	1886, Dec. 6	*CAMPBELL, COLIN	Bretby, near Burton-on-Trent.
99	1882, Apr. 24	CARD, HENRY	North Street, Lewes, Sussex.
49	1870, Dec. 12	CARDALL, FREDERIC WILLIAM . .	9, Whitehall Place, S.W.
113	1887, Dec. 19	*CARTER, ALFRED PRESLEY . . .	2, Steele's Road, Haverstock Hill, N.W.
52	1887, Jan. 10	*CARTER, FRANK WELLINGTON . .	Playing Close, Charlbury, Oxon.
97	1888, Nov. 12	*CAVE, BASIL SHILLITO	Queensberry House, Richmond, Surrey.
52	1889, Jan. 28	*CHALCRAFT, HENRY TERRELL . .	11, Dowgate Hill, E.C.
06	1883, Dec. 17	CHAPMAN, VAUGHAN GODFREY } ST. JOHN	82, Queen Street, E.C.
525	1888, Dec. 10	*CHENEY, EDWIN JOHN	Bachelor's Farm, Ockham, near Woking, Surrey.
121	1884, Mar. 10	CHESTER, WILLIAM RICHARD . . .	39, New Broad Street, E.C.
526	1888, Dec. 10	*CHILD, EDMUND HERBERT . . .	Copley Wood, near Halifax, Yorkshire.
112	1884 Feb. 25	CHRISTY, ARCHIBALD ERNEST . .	{ 30, Great St. Helen's, E.C., and Boynton Hall, Chelmsford, Essex.
007	1883, Dec. 17	CLARKE, PERCY HENRY	2, Lancaster Place, W.C.
426	1876, Feb. 7	CLAYDEN, WALTER	6, Moorgate Street, E.C.
285	1885, Dec. 7	*COALES, HERBERT GEORGE . . .	{ Market Harborough Local Board Offices, Market Harborough.
202	1884, May 26	COLLIER, ARTHUR CHARLES . . .	Estate Office, Somerset Terrace, Duke's Road, W.C.
414	1887, Dec. 19	*COLLINGHAM, J. CYRIL LEES . .	19, Mount Street, W.
826	1882, Dec. 4	*COLLINS, MARCUS E.	61, Old Broad Street, E.C.
320	1874, Jan. 5	COOKE, WILLIAM GEORGE	35, Walbrook, E.C.
926	1883, April 16	COUCHMAN, HENRY BOTELER . . .	Henley-in-Arden, Birmingham.
598	1881, Jan. 10	COURTHOPE, ALEXANDER	Bignor Park, Pulborough, Sussex.
747	1882, Feb. 13	COWPER, RICHARD WILLIAM . . .	81, High Street, Sittingbourne, Kent.
222	1870, Jan. 10	CRAWLEY, WILLIAM JEEVES . . .	Sayesbury, Sawbridgeworth, Herts.
615	1881, Mar. 21	CRESSWELL, JOHN THEODORE } ROSS	9, Whitehall Place, S.W.
608	1981, Feb. 7	CROFTS, EWAN NEVILE	Leadenham, Grantham, Lincolnshire.
335	1886, Dec. 6	*CROSLAND, WALTER	Huby, via Leeds, Yorkshire.
891	1883, Feb. 12	CROSS, JOHN	80, Cheapside, E.C.

Dip. No.	Date of Election.	PROFESSIONAL ASSOCIATES.	
1548	1889, Jan. 14	*CROUCH, JAMES LEONARD . . .	Cheriton, The Ridgeway, Enfield.
537	1879, Mar. 17	CUDLIPP, WILLIAM	33, Poultry, E.C.
877	1888, Jan. 29	CUMBERBATCH, CARLTON PARRY	9, Whitehall Place, S.W.
945	1883, May 21	DAFFARN, THOMAS ALFRED. . .	6, Spring Gardens, S.W.
723	1882, Jan. 30	DANSIE, FREDERICK CROWN. . .	51, Long Lane, Smithfield, E.C.
907	1888, Feb. 26	DASH, ROLAND ASHFORD . . .	9, Whitehall Place, S.W.
399	1875, Apr. 26	DASHWOOD, FREDERICK LOFTUS	Kirtlington, Oxford.
1527	1888, Dec. 10	*DAVEY, HENRY THOMAS . . .	St. Edburg's Cottage, Bicester, Oxon.
848	1882, Dec. 18	DAVID, EDMUND USSIER . . .	Llandaff, near Cardiff.
780	1882, Mar. 13	DAVIS, CHARLES JAMES	32, Strand, W.C.
1008	1883, Dec. 17	DAWSON, WALTER HENRY . . .	19, St. Edmund's Terrace, Regent's Park, N.W.
1010	1883, Dec. 17	DEMETRIADI, THOMAS MARSDEN	28, John William Street, Huddersfield.
1528	1888, Dec. 10	* × DIXON, FRANCIS EDWARD . .	{ Local Board Offices, Bamber Bridge, Walton-le- Dale, near Preston.
878	1883, Jan. 29	DOBIE, HENRY	Post Office Box 110, Port of Spain, Trinidad.
1415	1887, Dec. 19	* † DONE, JOHN JAMES	10, Finsbury Square, E.C.
748	1882, Feb. 13	DREW, ALLEN	80, Cheapside, E.C.
1229	1884, Dec. 8	* DUNNING, BERNARD SIMON . .	41, Claverton Street, S.W.
1529	1888, Dec. 10	* EAGLAND, WILLIAM FRANCIS . .	Didcot, Berks.
202	1869, Jun. 28	EASTON, EDWARD.	9, Delahay Street, S.W.
1011	1888, Dec. 17	ELLIS, CHARLES GODWIN . . .	2 & 3, Abchurch Yard, E.C.
1530	1888, Dec. 10	* ELLIS, HERBERT MOATES . . .	29, Fleet Street, E.C.
1113	1884, Feb. 25	ELLIS, LEONARD ASHBY	7, Criffel Avenue, Telford Park, Streatham, S.W.
1365	1887, Jan. 24	* ELLIS, RALPH STAPLES	69, Palace Gardens Terrace, Kensington, W.
667	1881, Dec. 19	ELWELL, WILLIAM HENRY . . .	{ Surveyor's Office, Great Northern Railway, King's Cross, N.
1047	1884, Jan. 14	EVANS, TOM AUGUSTUS JOHN . .	3, Old Palace Yard, S.W.
1416	1887, Dec. 19	* EVE, HERBERT TRUSTAM . . .	2, St. Paul's Square, Bedford.
1549	1889, Jan. 14	* EVES, WILLIAM LIONEL	Milton House, Uxbridge.
170	1869, Feb. 8	FAWCETT, JAMES POGUE. . . .	29, Fleet Street, E.C.
609	1881, Feb. 7	FEW, HARRY GARRARD	3, Upper Richmond Road, Putney, S.W.
1123	1884, Mar. 10	FITNESS, JOHN FRANCIS	80, Cheapside, E.C.
916	1883, April 2	FLETCHER, GEORGE RIVERS. . .	10A, Old Broad Street, E.C.
749	1882, Feb. 13	FLINT, WILLIAM HURST	Lincoln's Inn Fields (corner of Serle Street), W.C.
1531	1888, Dec. 10	* FOSTER, FRANK	37, Gower Street, W.C.
1114	1884, Feb. 25	FREEMAN, SYDNEY	28, Queen Street, E.C.
1124	1884, Mar. 10	FULLER, THOMAS ALFRED . . .	The College, All Saints', Derby.

† Driver Prize, 1887.

× Second Prize, 1888.

<i>Date of Election.</i>		PROFESSIONAL ASSOCIATES.
1	1882, Feb. 13	FURBER, HENRY AUBREY . . . 42, Marlborough Hill, N.W.
7	1887, Dec. 19	*FURBER, PERCY NORMAN . . . 6, Upper Hamilton Terrace, N.W.
9	1882, Dec. 18	FYFE, GEORGE PETERS COLLIER . . . 4, Walm Lane, Willesden Park, N.W.
2	1882, Jan. 16	GARROD, HERBERT JAMES . . . Bell Street, Reigate, Surrey.
4	1886, Jan. 11	*GIBBON, WILLIAM JACOMB . . . 36, Great James Street, Bedford Row, W.C.
22	1878, Dec. 9	GIBSON, WALTER MATTHEW . . . Privy Purse Office, Buckingham Palace, S.W.
36	1887, Mar. 21	*GOLIGHTLY, CHARLES HUGH . . . Shipton Moyne Rectory, Tetbury, Gloucestershire.
56	1883, May 25	GORE, WILLIAM JOIL . . . 105, Regent Street, W.
66	1884, Feb. 11	GOW, JAMES 9, Whitehall Place, S.W.
79	1883, Nov. 12	GRANT, HARRY GRÈME . . . { Surveyor's Office, Great Western Railway, Paddington, W.
112	1883, Dec. 17	GREEN, JAMES HENRY TOWNSEND . . . 22, Chancery Lane, W.C.
18	1887, Dec. 19	*GREEN, THOMAS JOHN . . . 1, Surrey Villas, Sevenoaks, Kent.
37	1886, Dec. 6	*GREEN, THOMAS JOSEPH . . . 28 and 29, St. Swithin's Lane, E.C.
30	1884 Dec. 8	*GREENOP, EDWARD . . . 74, Bonham Road, Brixton Rise, S.W.
32	1888, Dec. 10	*GRIMES, RALPH FEARON . . . Fernbank, Balham, S.W.
76	1884, Jan. 28	GRIMWADE, HENRY Colchester, Essex.
50	1889, Jan. 14	*GUNTER, JAMES Estate Office, Glasbury, Radnorshire.
31	1884, Dec. 8	*HALKYARD, WILLIAM REDFORD . . . The Firs, Knutsford.
79	1884, May 19	HALL, CHARLES PELL Euston, Thetford, Norfolk.
95	1886, Jan. 11	*HALL, WILLIAM TIMOTHY . . . Uppington, Wellington, Salop.
138	1886, Dec. 6	*HALTON, HARRY RUSSELL . . . Clydesdale Villa, Turner's Hill, Cheshunt, Herts.
70	1882, Feb. 27	HAMILTON, JOHN PAYNTER . . . 64 and 65, Coleman Street, E.C.
119	1887, Dec. 19	*HARDING, FREDERICK AILCROFT . . . 5, Waterloo Place, S.W.
114	1881, Feb. 21	HARPER, EDGAR JOSIAH . . . { Estate Office, London County Council, Spring Gardens, S.W.
523	1878, Dec. 9	HARVEY, JOHN JAMES SAYER . . . 1, Parade, Canterbury, Kent.
551	1889, Jan. 14	*HASKINS, WILLIAM ALBION . . . 51, Bromfelde Road, Clapham, S.W.
287	1885, Dec. 7	*HEBBLETHWAITE, CHAS. HENRY . . . Manor Drive, Free School Lane, Halifax, Yorkshire.
1014	1883, Dec. 17	HEBDEN, GEORGE RADCLIFFE . . . 66, Cannon Street, E.C.
588	1880, Dec. 13	HEDGER, ARTHUR CONSTANTINE . . . 80, Cheapside, E.C.
573	1889, Jan. 28	*HENDERSON, HARRY GILBERT . . . Dunholme, The Park, Cheltenham.
821	1882, Nov. 13	HENDERSON, HENRY ARTHUR . . . { Pembury Estate Office, Pembury Road, Lower Clapton, E.
353	1837, Jan. 10	*HENDERSON, RICHARD 20, George Street, Edinburgh.
928	1883, April 16	HENRY, EDWARD HUGH 63, High Street, Clapham, S.W.
850	1882, Dec. 18	HEWITT, WILLIAM Ivy Lodge, Aylestone Hill, Hereford.
948	1883, May 21	HICKS, STANLEY 10, Lincoln's Inn Fields, W.C.

‡ Driver Prize, 1885.

† Institution Prizeman, 1884.

Dip. No.	Date of Election.	PROFESSIONAL ASSOCIATES.	
1808	1886, Jan. 25	*HILLIARD, GEORGE EDWARD	Chelmsford, Essex.
1015	1883, Dec. 17	HINCHLIFFE, JOHN, JUN.	Bullhouse Hall, Pennistone, Sheffield.
1552	1889, Jan. 14	*HODGE, LEONARD PERCIVAL	{ Estate Office, L. & S. W. Railway, Water Station, S.E.
1180	1884, May 19	HODSOLL, WILLIAM, JUN.	Farningham, Kent.
908	1883, Feb. 26	HOLBECH, ÆMILIAN HENRY	43, Church Gate, Loughborough.
893	1883, Feb. 12	HOLLAND, THOMAS JAMES, JUN.	{ 1, Pembroke Cottages, Edwardes Square, Kensington, W.
879	1883, Jan. 29	HOLMES, JAMES THOMAS	97, Gresham Street, E.C.
1595	1889, Feb. 25	*HOMAN, HUBERT FRANKLIN	146 and 147, Eastgate, Rochester, Kent.
822	1882, Nov. 13	HOMFRAY, WILLIAM FRANCIS	Rease Heath Estate Office, Nantwich, Cheshire
1181	1884, May 19	HOOPER, ALFRED FREDERICK	1, Laura Villas, London Road, Andover, Hants
1446	1888, Jan. 23	*HOOPER, CECIL HENRY	Horticultural College, Swanley, Kent.
1048	1884, Jan. 14	HOPKINS, EDWIN	9, Whitehall Place, S.W.
866	1883, Jan. 15	HOWELL, ERNEST JOHN	116, Cromwell Road, S.W.
1016	1883, Dec. 17	HUSKINSON, THOMAS WILLIAM	Epperstone Manor, Nottingham.
1017	1883, Dec. 17	HUSSEY, GEORGE HENRY CLE-	{ 1, Gray's Inn Place, W.C.
		LAND	
1182	1884, May 19	HUSSEY, ROBERT	Newborough, near Burton-on-Trent, Staffordshire
851	1882, Dec. 18	INGRAM, HENRY LAW	97, Gresham Street, E.C.
1340	1886, Dec. 6	*IVIMEY, ALFRED	74, Lavender Hill, S.W.
550	1879, Nov. 24	JESSETT, CHARLES	62, Old Broad Street, E.C.
226	1870, Jan. 24	JOHNSTON, ANDREW	97, Gresham Street, E.C.
1420	1887, Dec. 19	*JOHNSTON, WALTER HENRY	6, Latham Street, Preston.
1463	1888, Feb. 20	*† JONAS, HARRY MARSHALL	Brooklands Avenue, Cambridge.
1375	1887, Feb. 21	*JONAS, SAMUEL MARSHALL	Brooklands Avenue, Cambridge.
1619	1889, Apr. 1	*JONES, FREDERICK HERBERT	Normanhurst, Ealing, W.
678	1881, Dec. 19	JONES, THOMAS	15, Great George Street, S.W.
1018	1883, Dec. 17	JORDAN, GEORGE HENRY	16, Whitehall Place, S.W.
1323	1886, May 17	*JULL, WILLIAM VINCENT	Wrotham Lodge, Streatham Hill, S.W.
1163	1884, May 5	KEELING, GILBERT	2, Tckenhouse Buildings, Lothbury, E.C.
880	1883, Jan. 29	KEER, WILLIAM	35, Walbrook, E.C.
1077	1884, Jan. 28	KERR, ARTHUR HERBERT	Bootham, Yorkshire.
624	1881, May 16	KETTLER, FREDERICK CHARLES	Tower Chambers, Moorgate Street, E.C.
1387	1887, Mar. 21	*KING, WILLIAM ISAAC	The Grange, Highgate, N.
853	1882, Dec. 18	KNOWLES, HENRY	Wells Green, Gloucester.

P.	Date of Election.	PROFESSIONAL ASSOCIATES.	
53	1889, Jan. 14	*¶ LAMBERT, GODFREY CHARLES .	27, Chancery Lane, W.C.
19	1888, Dec. 17	LAWRENCE, WILLIAM ROBERT	22, Surrey Street, Victoria Embankment, W.C.
11	1876, Apr. 8	LEE, GEORGE CANSFIELD . .	North Eastern Railway, York.
54	1887, Jan. 10	*LEE, JOHN WILFRID . . .	Fairholme, Creffield Road, Colchester, Essex.
43	1884, Apr. 21	LIGHTFOOT, JOHN GEORGE . .	9, Whitehall Place, S.W.
64	1884, May 5	LOFTS, HENRY FAIRLAM . . .	130, Mount Street, W.
83	1884, May 19	LOVESAY, WILLIAM	4, Frederick's Place, E.C.
26	1884, Mar. 10	LOW, ROBERT JOHN	Cumberland Road, St. Albans, Herts.
55	1887, Jan. 10	*LOWE, CHARLES ROBERT . . .	95, Park Street, Grosvenor Square, W.
89	1877, May 14	LUCAS, JOSEPH	21, Defoe Road, Tooting Graveney, S.W.
04	1884, May 26	LYNCH, JAMES HENRY	302, Regent Street, W.
17	1883, April 2	LYSTER, THOMAS RICE SOMER- VILLE	} Bedford Office, Thorney, Peterborough.
44	1884, Apr. 21	MCALLUM, PETER SERVICE .	
18	1886, May 3	*MADDOX, CHARLES RALPH . .	9, Warwick Court, Gray's Inn, W.C.
54	1889, Jan. 14	*MANN, ROBERT BAGSHAW . .	Townfield, Hayes, Middlesex.
70	1877, Jan. 15	MARRIOTT, GEORGE WHARTON .	7, Sumner Terrace, Onslow Square, S.W.
55	1889, Jan. 14	*† MARTIN, HEBER GAMBLING .	Highfield House, Littleport.
83	1888, Dec. 10	*MARTIN, THOMAS	182, High Street, Tonbridge, Kent.
56	1887, Jan. 10	*¶ MAXWELL, FRANCIS WILLIAM .	29, Princess Street, Manchester.
308	1886, Feb. 22	*MEAD, JOHN HENRY	9, Whitehall Place, S.W.
147	1888, Jan. 23	*MELROSE, FRANK	Heslington, York.
145	1884, Apr. 21	MERRETT, JAMES.	9, Whitehall Place, S.W.
497	1878, Jan. 28	MESTON, JOSEPH FYFE	50, Parliament Street, S.W.
421	1887, Dec. 19	*¶ MILLWARD, ISAAC	Office of Public Works, Dublin, Ireland.
752	1882, Feb. 18	MILNES, ROBERT, JUN. . . .	333, Oxford Street, W.
232	1884, Dec. 8	*MIXER, EDWARD	80, Cheapside, E.C.
534	1888, Dec. 10	*MORGAN, ALFRED WALKER .	Little Mill, Pontypool, Monmouthshire.
127	1884, Mar. 10	MOSS, THOMAS WALTER. . . .	21, Doughty Street, W.C.
965	1888, May 25	*MOYES, JOHN HELENUS . . .	26, Trinity Street, Cambridge.
166	1884, May 5	MYLNE, WILLIAM JOHN HOME .	47, Hamilton Terrace, N.W.
856	1882, Dec. 18	NEWMAN, CHARLES HENRY . .	34, Savile Row, Burlington Gardens, W.
020	1883, Dec. 17	NEWTON, THOMAS EDWIN . . .	45, Jewry Street, Winchester.
556	1889, Jan. 14	*NOCKOLDS, MARTIN CHARLES HUBERT	} Saffron Walden, Essex.
128	1884, Mar. 10	NORRIS, EDWARD JAMES . . .	
602	1878, Feb. 11	NORRIS, WALTER HENRY . . .	60, Fore Street, Hertford, Herts.
57	1889, Jan. 14	*NORTON, GEORGE PERCY . . .	The Mount, Parkhill Road, Croydon.
1698	1884, Feb. 11	OWEN, THOMAS HENRY	Haverfordwest, Pembrokeshire.

Dip. No.	Date of Election.	PROFESSIONAL ASSOCIATES.	
781	1882, Mar. 13	PAGE, THOMAS GOWLAND . . .	57, Coleman Street, E.C.
966	1883, May 25	*† PAIN, JAMES	Borough, Micheldever, Hants.
1535	1888, Dec. 10	* PALAMOUNTAIN, JOSEPH WILLIAM	Beauchief Abbey, Sheffield.
1422	1887, Dec. 19	* PARRY, RICHARD	22, Dagmar Road, Camberwell, S.E.
1876	1887, Feb. 21	* PATERSON, ANDREW THOMPSON	4, Hamilton Place, Totton, Southampton, Hants.
402	1875, May 10	PAYNE, WILLIAM PERCY . . .	Holmesdale, The Park, Nottingham.
857	1882, Dec. 18	PEACE, ALFRED LINDLEY . . .	Thorne, Doncaster.
1146	1884, Apr. 21	PEARCE, FREDERICK WILLIAM .	9, Whitehall Place, S.W.
1167	1884, May 5	PEARCE, WILLIAM JOHN . . .	4, Frederick's Place, E.C.
1357	1887, Jan. 10	* PELHAM-CLINTON, HUBERT ED- WARD	} Moor Court, Stroud, Gloucestershire.
1341	1886, Dec. 6	* x PERKINS, WALTER FRANK .	
1389	1887, Apr. 18	* PERKS, SIDNEY	Soho Lodge, Wandsworth Common, S.W.
1184	1884, May 19	PERRERS, HARRY WILSON . . .	8, Argyll Place, Regent Street, W.
216	1869, Dec. 6	PETRE, THE HON. HENRY WILLIAM	Springfield, Chelmsford, Essex.
1078	1884, Jan. 28	* PETRE, ROBERT GEORGE . . .	Springfield, Chelmsford, Essex.
1021	1883, Dec. 17	PEWTRESS, HERBERT WILMS- HURST	} 22, Chancery Lane, W.C.
1129	1884, Mar. 10	PHILLIPS, GEORGE CAWKWELL .	
1079	1884, Jan. 28	PHILLIPS, JOHN HENRY . . .	130, Mount Street, Berkeley Square, W.
1448	1888, Jan. 23	* = PHILLIPS, WILLIAM DEARLOVE	High Wycombe, Bucks.
1342	1886, Dec. 6	*† PHYSICK, WALTER FREDERICK	136, Marylebone Road, N.W.
1022	1883, Dec. 17	POWELL, HUBERT JOHN . . .	St. Swithun's, Lewes, Sussex.
1343	1886, Dec. 6	* PRATER, THOMAS HERBERT .	Basingstoke, Hants.
1536	1888, Dec. 10	* PRESTON, SAMUEL DAVID . .	Park Farm Office, Woburn, Bedfordshire.
1205	1884, May 26	PRICE, THOMAS WILLIAM . . .	59, Fenchurch Street, E.C.
1099	1884, Feb. 11	PRIDHAM, JOHN LAWRENCE . .	Paignton, South Devon.
1289	1885, Dec. 7	* RAND, JOHN	Audley Lodge, Reigate Hill, Reigate, Surrey.
801	1882, Apr. 24	REX, CHARLES WILLIAM . . .	1, Stanhope Terrace, Regent's Park, N.W.
802	1882, Apr. 24	REX, FRANCIS HERBERT . . .	311, Kentish Town Road, N.W.
881	1883, Jan. 29	RIGDEN, CHARLES FURNER . .	The Pines, Maybury Heath, Woking, Surrey.
423	1876, Jan. 24	ROBERTS, Q. CHARLES . . .	{ 3, Upper Montague Street, Russell Square, and 2, South Square, Gray's Inn, W.C.
753	1882, Feb. 13	ROBERTS, CHARLES GORDON . .	
754	1882, Feb. 13	ROBEY, ROBERT	Oaklands, East Tytherley, near Romsey, Hants.
1423	1887, Dec. 19	* ROBINSON, ALFRED WHITMORE .	3, Old Palace Yard, S.W.
725	1882, Jan. 30	ROBINSON, JAMES THOMAS . .	7, John Street, Adelphia, W.C.
803	1882, Apr. 24	ROBINSON, MARTIN CATLIN . .	Oakley Hall, Bishop's Stortford.
1130	1884, Mar. 10	ROSE, EDWARD JOSEPH . . .	48, Broad Street, Oxford.
1081	1884, Jan. 28	ROSS, DAVID JAMES	Surveyors' Office, Guildhall, E.C.
940	1883, April 30	ROWLANDSON, CHRISTOPHER . .	The College, Durham.

* Institution Prizeman, 1886.

x Second Prize, 1886.

= Second Prize, 1887.

Date of Election. PROFESSIONAL ASSOCIATES.

0	1883, May 25	*† RUNDLE, EDWARD COLLINS	Bedford Office, Tavistock, Devon.
6	1884, May 26	RUSSELL, JAMES ELGAR	St. John's, Sutton-at-Hone, near Dartford, Kent.
9	1883, Feb. 26	RYDE, CHARLES BERTRAM	29, Great George Street, S.W.
4	1883, Dec. 17	SABIN, JOSEPH HENRY	16, Whitehall Place, S.W.
3	1884, Dec. 8	*† SADLER, GEORGE WILLIAM, Jun.	261, Lavender Hill, Clapham Junction, S.W.
8	1876, Mar. 20	ST. QUINTIN, RICHARD SAMUEL	37, Threadneedle Street, E.C.
4	1887, Dec. 19	*SALT, REGINALD NOWELL	Quarry Place, Shrewsbury.
1	1883, May 25	*= SATCHELL, CHARLES	Madeira Place, Newbury, Berks.
7	1884, Apr. 21	SAUNDERS, SAMUEL BROWN	{ Estate Office, L. & S. W. Ry., Waterloo Station, S.E.
8	1884, Apr. 21	SCARLETT, HARRY	Downland, Uckfield, Sussex.
7	1883, Jan. 15	SCAMMELL, THOMAS	14, John Street, Bristol.
4	1884, Dec. 8	* x SELBY, JOHN BASELEY	Atherton Hall, Leigh, near Manchester.
2	1880, Feb. 16	SEXBY, JOHN JAMES	London County Council, Spring Gardens, S.W.
9	1884, Jan. 14	SHACKLE, EDWARD NEILD	Holmbury, Hayes, Middlesex.
25	1887, Dec. 19	*SHAW, ARTHUR	{ Ramsden Estate Offices, Railway Street, Huddersfield.
50	1883, May 21	SHAW, JOHN, Jun.	The College, All Saints', Derby.
49	1884, Apr. 21	SHERRY, NATHANIEL	49, Fenchurch Street, E.C.
1	1882, May 8	SIMMONS, CHARLES FRANKLIN	Basingstoke, Hants, and Henley-on-Thames.
24	1882, Dec. 4	SIMMONS, WILLIAM ANKER	Henley-on-Thames.
32	1884, Jan. 28	SKEWIS, EDWIN	Shoelands, Edgware, Middlesex.
58	1882, Dec. 18	SKINGLE, ALFRED	29, Fleet Street, E.C.
50	1884, Jan. 14	SLADE, ISAAC	96, Queen Street, E.C.
38	1883, Dec. 10	*† SMITH, FRANK WILLIAM	Beauchamp Hill, Milverton, Leamington.
38	1879, Mar. 17	SMITH, GEORGE CECIL	{ 81, Bondgate, Darlington, Durham, and 16, Whitehall Place, S.W.
52	1868, Nov. 9	SMYTH, EDWARD	{ 9, Whitehall Place, and 52, Wiltshire Road, Brixton, S.W.
(Professional Associate of Council)			
38	1883, Jan. 15	STACEY, WILLIAM	80, Cheapside, E.C.
11	1883, Mar. 19	STENNING, PERCY HAINES	4, Abchurch Yard, E.C.
10	1882, Jan. 16	STEVENSON, FREDERICK J.	4, Frederick's Place, E.C.
28	1882, Dec. 4	STOWER, JOSEPH	29, Fleet Street, E.C.
5	1875, Dec. 13	STRUTT, THE HON. EDWARD GERALD	{ Terling Place, Witham, Essex.
78	1889, Feb. 11	*STUCKÉ, WILLIAM HENRY	3, Berwick Street, South Balgravia, S.W.
35	1884, Dec. 8	*STURGE, THEODORE	34, Corn Street, Bristol.
96	1886, Jan. 11	*STURGESS, JOHN MOORE	Penshurst Park, near Tunbridge, Kent.
27	1887, Dec. 11	*SWETENHAM, HENRY	Kerry, Montgomeryshire.
56	1882, Feb. 13	SWINSCOW, HAROLD EDWIN	2, Streatham Hill, S.W.

† Driver Prize, 1883.

x Bracketted Second Prize, 1883.

= Second Prize, 1884.

Dip. No.	Date of Election.	PROFESSIONAL ASSOCIATES.	
771	1882, Feb. 27	TAPP, ARTHUR	{ 15, Great George Street, S.W., and Southend-on-Sea, Essex.
805	1882, Apr. 24	TARLETON, ROGER	4, Market Street, Northwich, Cheshire.
212	1869, Jul. 26	TAYLOR, GEORGE.	{ Hillside House, Turner's Hill, Crawley, Sussex and 17, Abchurch Lane, E.C.
1026	1888, Dec. 17	TAYLOR, MATTHEW	Northchapel, Petworth, Sussex.
806	1882, Apr. 24	THEOBALD, HENRY	{ 87, Finsbury Pavement, and Leyton House, Goodall Road, Leytonstone, E.
1027	1888, Dec. 17	THOMPSON, ALFRED	{ Estate Department, South Eastern Railway, London Bridge, S.E.
1185	1884, May 19	THOMPSON, WILLIAM	4, Eleanor Villas, St. Mary's Road, Ilford, Essex.
869	1888, Jan. 15	THORNTON, WILLIAM HENRY	{ Castle Keep, Reigate, Surrey, and The Surveyor General's Department, Ceylon.
757	1882, Feb. 13	THORPE, CHRISTOPHER	Spring House, Calow, Chesterfield.
1100	1884, Feb. 11	THURGOOD, ERNEST CHARLES	27, Chancery Lane, W.C.
1537	1888, Dec. 10	*TILLY, HUBERT DOUGLAS	9, Craufurd Rise, Maidenhead, Berks.
592	1880, Dec. 18	TROLLOPE, HENRY CHARLES	7, Hobart Place, S.W.
1181	1884, Mar. 10	TRUMPER, JOHN ALFRED.	23, Lincoln's Inn Fields, W.C.
1051	1884, Jan. 14	TUDOR, COLIN AUGUSTUS BU- CHANAN	{ Booth Ferry Road, Goole, Yorkshire.
1052	1884, Jan. 14	TUDOR, EDWARD CHARLES BU- CHANAN	{ West House, Booth Ferry Road, Goole, Yorkshire.
1394	1887, May 23	*TURNER, PERCY	7, Lower Brook Street, Ipswich, Suffolk.
1168	1884, May 5	UDNY, AUGUSTUS CHARLES	142, Springfield Road, Preston, Brighton.
1596	1889, Feb. 25	*VALE, HENRY	St. Mark's Road, Wolverhampton.
1428	1887, Dec. 19	*VARLEY, THOMAS ERNEST	46, Queen Victoria Street, E.C.
1208	1884, May 26	VIGERS, SIDNEY	18, Abingdon Street, S.W.
1464	1888, Feb. 20	*WADE, HENRY	10, Pitt Street, Barnsley.
576	1880, Mar. 1	WALKER, LEON VICTOR	Summerhill Road, West Green Road, N.
1028	1883, Dec. 17	WALLIS, JOHN DAVID	37, Brown Street, Manchester.
1029	1883, Dec. 17	WARD, GEORGE	2, Lancaster Place, W.C.
1426	1887, Dec. 19	*WARTON, WILFRED	{ Thurlow Villa, Bolingbroke Grove, Wandsworth Common, S.W.
1030	1882, Dec. 17	WATERER, CLARENCE	Dover House, Chertsey, Surrey.
1236	1884, Dec. 8	*WATSON, JAMES BRUCE	Brightwell, Tetsworth, Oxon.
1290	1885, Dec. 7	*WATSON, JOHN, JUN.	Estate Office, Shirburn, Tetsworth, Oxon.
1539	1888, Dec. 9	*WATSON, RICHARD	Fore Street, Kingsbridge, Devon.
1540	1888, Dec. 9	*WEBB, FREDERIC NOEL	Wood House, Stansted, Essex.
679	1881, Dec. 19	* WEBB, JONAS MARSHALL	7, Prince's Street, Hanover Square, W.

Date of Election. PROFESSIONAL ASSOCIATES.

1	1883, Dec. 19	WELLS, EDWARD OGBOURN	9, Whitehall Place, S.W.
9	1884, May 5	WELLS, WILLIAM HOWLEY	Estate Office, Evershot, Dorset.
0	1883, April 16	WESTON, GEORGE	177, Harrow Road, Paddington, W.
1	1883, April 30	WESTON, JOSEPH AURELIUS	83, High Street, Bedford.
9	1887, Dec. 19	*WHALLEY, FREDERICK HERBERT	{ 98, Church Street, Birkenhead, and 37, Pepper Street, Chester.
0	1887, Dec. 19	*WHEELER, CHARLES TREVOR OGLE	
40	1883, Jan. 9	*WIGHT, NORMAN	Las Palmas, Grand Canary.
60	1882, Dec. 18	WILCOCKS, FREDERICK C.	87, Iverson Road, West Hampstead, N.W.
87	1884, Dec. 8	*WILLARD, THOMAS	Estate Office, L. & N.W. Ry., Euston Station, N.W.
78	1875, Jan. 18	WILLIAMS, LEONARD JAMES	6, Furnival's Inn, E.C.
04	1886, Jan. 25	*WILLIAMS, SIDNEY	Kelvin Lodge, Catford Bridge, S.E.
61	1882, Dec. 18	WILLIAMS, TOM	Estate Agency Office, Clarence Street, Staines.
42	1876, Apr. 3	WILLIAMS, WILLIAM WELSBY	Farnham, Surrey.
83	1884, Jan. 23	WILLOUGHBY, CHARLES WILLIAM	22, Chancery Lane, W.C.
49	1888, Jan. 23	*WILSON, WILLIAM EDWARD	{ St. Andrew's Chambers, Albert Square, Manchester.
89	1879, Mar. 17	WOOD, HENRY	
711	1882, Jan. 16	WOODWARD, WILLIAM	The Turret, West Heath Road, Hampstead, N.W.
358	1887, Jan. 10	*WOOLNOUGH, JOHN WILLIAM	Gladstone Villa, Beamsley Road, Eastbourne.
558	1889, Jan. 14	*WORDLEY, ALEXANDER GEORGE	110, Marlborough Road, Chelsea, S.W.
481	1887, Dec. 19	*WORTHINGTON, JAMES SCOTT	4, Frederick's Place, E.C.
595	1880, Dec. 13	WRIGHT, THOMAS HAWKINS	Lundy Island, viâ Instow, North Devon.
599	1881, Jan. 10	YOUNG, ANDREW	{ The School Board for London, Victoria Embankment, W.C.
524	1878, Dec. 9	YOUNG, MORGAN HENRY	

Associates.

Date of Election.

1876, Mar. 20	ACLAND, SIR THOMAS DYKE, } BART. }	Killerton, Exeter.
1882, Mar. 27	ANDERSON, CHARLES HENRY, } Q.C., M.P. }	9, King's Bench Walk, Temple.
1880, Dec. 13	BANKES, JOHN ELDON	4, Elm Court, Temple.
1888, May 14	BARNES, GEORGE FREDERICK . .	{ Northumberland Chambers, Northumberland Avenue, W.C.
1868, Jul. 27	BARRY, JOHN WOLFE (Associate of Council)	23, Delahay Street, S.W.
1875, Dec. 13	BATTEN, JOHN WINTERBOTHAM	3, Harcourt Buildings, Temple.
1879, Feb. 8	BEALE, JAMES SAMUEL	28, Great George Street, S.W.
1869, Feb. 22	BIDDER, GEORGE PARKER, Q.C.	3, Paper Buildings, Temple.
1875, Feb. 1	BIRCH, ROBERT WILLIAM } PEREGRINE }	5, Queen Anne's Gate, S.W.
1868, Jun. 23	BRAMWELL, SIR FREDK. JOSEPH, } BART., F.R.S. }	5, Great George Street, S.W.
1887, Dec. 5	BRISTOWE, ARTHUR LYNN . . .	6, Crown Office Row, Temple.
1884, Feb. 11	BUND, JOHN W. WILLIS	3, Stone Buildings, Lincoln's Inn, W.C.
1869, Jul. 26	CARLISLE, WILLIAM THOMAS . .	8, New Square, Lincoln's Inn, W.C.
1871, Feb. 13	CASTLE, EDWARD JAMES, Q.C. . .	8, King's Bench Walk, Temple.
1876, Nov. 13	CLARKE, DANIEL	Easton Street, High Wycombe, Bucks.
1883, Dec. 17	CLARKE, SIR EDWARD, Q.C., M.P.	5, Essex Court, Temple.
1883, Dec. 17	CLODE, WALTER	3, Harcourt Buildings, Temple.
1886, Dec. 6	CLUTTON, HUBERT SPENCER . . .	9, Whitehall Place, S.W.
1885, Jan. 12	CRIPPS, CHARLES ALFRED	2, Mitre Court Buildings, Temple.
1883, April 16	DETHRIDGE, FRANK	Vestry Hall, Harrow Road, Paddington, W.
1883, April 30	DRUCE, SAMUEL BENJAMIN LARGE	9, Old Square, Lincoln's Inn, W.C.
1887, May 9	ELTON, CHARLES ISAAC, Q.C., } M.P. }	23, Cranley Place, Onslow Square, S.W., and 33, Chancery Lane, W.C.
1869, Feb. 22	FOWLER, SIR JOHN	2, Queen Square Place, S.W.
1886, Jan. 11	FREAM, WILLIAM	The College of Agriculture, Downton, Wilts.
1878, Feb. 11	FREEMAN, GEORGE MALLOWS . . .	11, King's Bench Walk, Temple.
1878, Mar. 11	FRESHFIELD, EDWIN	5, Bank Buildings, E.C.
1876, Mar. 20	FRESHFIELD, WILLIAM DAWES . .	5 Bank Buildings, E.C.

<i>Date of Election.</i>	ASSOCIATES.	
1879, Apr. 28	GEPP, CHARLES BRAMSTON OSBORNE	Chelmsford, Essex.
1874, Feb. 16	GOLDNEY, GABRIEL PRIOR . .	Remembrancer's Office, Guildhall, E.C.
1869, Jan. 11	GRANTHAM, RICHARD BOXALL . .	Northumberland Chambers, Northumberland Avenue, W.C.
1874, Jan. 5	GRANTHAM, RICHARD FUGE . .	Northumberland Chambers, Northumberland Avenue, W.C.
1881, Dec. 19	GROVES, WILLIAM	28, Great George Street, S.W.
1880, Dec. 13	GULLY, WILLIAM COURT, Q.C., M.P.	Farrar's Buildings, Temple.
1881, Dec. 19	HALSEY, EDWARD JOSEPH . .	9, Drayton Gardens, South Kensington, S.W.
1882, Mar. 27	HAMILTON, HENRY BEST HANS .	1, Brick Court, Temple.
1884, May 5	HAMOND, THOMAS ASTLEY HORACE	62, Lincoln's Inn Fields, W.C.
1881, Dec. 19	HEAD, JOHN MERRICK	Reigate, Surrey.
1875, Dec. 13	HIGGIN, WILLIAM HOUSMAN, Q.C.	32, St. Ann Street, Manchester.
1875, Jan. 4	HILL, ALEXANDER STAVELEY, Q.C., M.P.	13, King's Bench Walk, Temple; and Oxley Manor, Stafford.
1887, Jan. 24	HUDSON, ALFRED ARTHUR . .	5, Paper Buildings, Temple.
1880, Dec. 13	JAMES, SIR HENRY, Q.C., M.P.	1, New Court, Temple.
1885, Jan. 12	JONGH, JOHN ISIDORE DE . .	San José, Costa Rica, Central America.
1887, May 23	KINCH, EDWARD	Royal Agricultural College, Cirencester.
1873, April 21	KING, WILLIAM	Gas Office, Duke Street, Liverpool.
1874, Feb. 2	LEDGARD, FREDERICK THOMAS DURELL, Q.C.	1, Temple Gardens, Temple.
1874, Feb. 16	LITTLER, RALPH DANIEL MAKIN- SON, Q.C.	4, Temple Gardens, Temple.
1869, Mar. 8	LOTT, JOSEPH	19, Great George Street, S.W.
1888, Mar. 5	LUARD, MAJOR-GEN. CHARLES EDWARD, R.E.	Ightham Knoll, near Sevenoaks, Kent.
1874, Feb. 16	MARRIOTT, THE RIGHT HON. SIR WILLIAM THACKERAY, Q.C., M.P.	6, Crown Office Row, Temple.
1886, Dec. 6	MARSHALL, FREDERICK	3, Harcourt Buildings, Temple.
1879, Jan. 6	MEYSEY-THOMPSON, ALBERT CHILDERS	41, Parliament Street, S.W.; and 1, King's Bench Walk, Temple.
1888, Nov. 12	MOULTON, JOHN FLETCHER, Q.C.	11, King's Bench Walk, Temple, E.C.
1882, Dec 18	MUNTON, FRANCIS KERRIDGE .	95A, Queen Victoria Street, E.C.
1869, Feb. 22	PHILBRICK, FREDK. ADOLPHUS, Q.C.	Lamb Building, Temple.
1888, Mar. 19	POLLARD, EDWARD HUTCHINSON	3, Elm Court, Temple.

Date of Election.

ASSOCIATES.

1884, Feb. 11	POPE, SAMUEL, Q.C.	38, Parliament Street, S.W.
1887, Jan. 24	POTTER, WILLIAM, Q.C.	5, Paper Buildings, Temple.
1886, Jan. 11	PROCTER, FOSTER WILFRED	36, Lincoln's Inn Fields, W.C.
1871, Feb. 27	QUICK, JOSEPH, JUN.	29, Great George Street, S.W.
1868, Nov. 9	REES, JOHN CHARLES	13, Great George Street, S.W.
1885, Jan. 26	RICKARDS, ARTHUR GEORGE	11, King's Bench Walk, Temple.
1882, Jan. 16	RIGG, HERBERT ADDINGTON	9, King's Bench Walk, Temple.
1888, April 2	RYDE, WALTER CRANLEY	1, Brick Court, Temple.
1884, Dec. 8	SCOTT, THE HON. HENRY ROBERT	Estate Office, Moreton, Dorchester.
1889, Feb. 11	SETH-SMITH, ARCHIBALD	Silvermere, Cobham, Surrey.
1888, Apr. 30	SETH-SMITH, FREDERICK	Penn Croft, Crondall, Hants.
1886, Apl. 12	SHOPPEE, GERALD AUGUSTINE	7, Furnival's Inn, E.C.
1879, Apr. 28	SLADEN, ST. BARBE	1, Delahay Street, S.W.
1879, Apr. 28	SMITH, LUMLEY, Q.C.	4, Paper Buildings, Temple.
1884, Jan. 14	STATHAM, WILLIAM ARNOLD	12, King's Bench Walk, Temple, and 38, Parliament Street, S.W.
1882, Jan. 16	STEPHENS, PEMBROKE S., Q.C.	1, Plowden Buildings, Temple.
1886, May 3	STEVENS, WILLIAM RICHARD	6, St. Thomas Street, S.E.
1881, Jan. 24	STEVENSON, GEORGE WILSON	38, Parliament Street, S.W.
1875, Jan. 4	STRUTT, FREDERICK, THE HON.	Milford House, Derby.
1877, Dec. 10	SUTTON, HENRY	Farrar's Building, Temple.
1888, Mar. 5	TAYLOR, JOHN HERBERT	5, Great George Street, S.W.
1880, Dec. 13	THOMAS, HUBERT	Watford, Herts.
1868, Jul. 20	TROLLOPE, GEORGE FRANCIS	15, Parliament Street, S.W.
1887, Jan. 10	VENNING, JOHN JAMES EDG. COMBE	} Devonport.
1885, May 18	WARREN, REGINALD AUGUSTUS	99, Great Russell Street, W.C.
1876, Nov. 27	WEBSTER, SIR RICHD. EVERARD, Q.C., M.P.	} 2, Pump Court, Temple.
	(Associate of Council)	
1884, May 26	WELLS, ALFRED DODD	Sotwell Hill, Wallingford, Berks.
1886, May 17	WHEELER, THOMAS WHITTENBURY, Q.C.	} 4, Crown Office Row, Temple.
1871, Feb. 13	WHITE, FREDERICK MEADOWS, Q.C.	} 4, Paper Buildings, Temple, and 42, Sussex Gardens, Hyde Park, W.
1873, Jan. 27	WHITE, THOMAS JENNINGS	8, Whitehall Place, S.W.
1876, Dec. 18	WILL, JOHN SHIRESS, Q.C., M.P.	2, Garden Court, Temple.
1875, May 15	WINCKWORTH, LEWIS	31, Abingdon Street, S.W.
1870, Jan. 10	WING, THOMAS TWINING	17, Woburn Square, W.C.
1882, Dec. 18	WOOLF, SIDNEY	7, King's Bench Walk, Temple.

*Passed
Preliminary
Examination.*

Students.

1888	ABRAMS, BENJAMIN PERCY	48, Maida Vale, W.
1888	ALDRIDGE, JOSEPH ARTHUR	62, Old Broad Street.
1889	ARNOLD, ARTHUR HARRIS	Hamtledon, Hants.
1887	AYLEN, CECIL HUGH	1, Great James Street, W.C.
1889	BANCROFT, FREDERICK HERBERT	83, Mosley Street, Manchester.
1888	BARCLAY, THOMAS	Lonsdale House, Moseley, Birmingham.
1887	BEADEL, MAURICE FREDERICK .	97, Gresham Street, E.C.
1889	BERTWISTLE, ARTHUR	St. George's Place, Preston Road, Blackburn.
1889	BOWDEN, ERNEST NEWTON . .	Wansbeck House, Stretford, near Manchester.
1888	BRIGHTMAN, HERBERT EDWARD	Edward Street, Sheerness-on-Sea, Kent.
1889	BRINKWORTH, ROBERT EDWIN .	Sheldon Lodge, Chippenham, Wilts.
1889	BROOKE, JOHN CHRISTIAN . .	Kirkby Villa, Cricklewood, N.W.
1889	BROWN, GEORGE TURVILL . .	15, Cheyne Gardens, Chelsea, S.W.
1888	BUCKLAND, HERRERT TUDOR .	Oaklands, Augusta Road, Moseley, Birmingham.
1889	BUCKLAND, SIDNEY CRAWFORD .	Windsor, Berks.
1887	BURTON, PERCY CHARLES . .	43, Mount Park Crescent, Ealing, W.
1888	CHURCH, LEONARD RONALDSON .	Rokesly, Middle Lane, Hornsey, N.
1888	COBHAM, GEORGE WILLIAM . .	3, Edwin Street, Gravesend.
1889	COOPER, JOHN HANKS, JUN. . .	195, Parrock Street, Gravesend.
1887	CRAWSHAY, LIONEL RUTTLEDGE	Ystrad Mynach, near Cardiff.
1888	CROOKES, CHARLES REGINALD .	Melrose, Church Road, Richmond, Surrey.
1887	DEBENHAM, HORACE BENTLEY .	Cheshunt Park, Herts.
1889	DEBENHAM, HUGH	80, Cheapside, E.C.
1887	DENDY, WILLIAM COOPER . .	46, Fordwych Road, Brondesbury, N.W.
1889	EAGER, EDWARD HENRY	The Lower Close, Norwich.
1888	ELWELL, MORTIMER CECIL . .	36, Arundel Square, Barnsbury, N.
1889	FINN, HERBERT ARCHIBALD . .	105, Widmore Road, Bromley, Kent.
1889	FLEETWOOD, GEORGE SPALDING	388, Camden Road, N.
1889	FOSTER, JAMES HERBERT FUR- MEDGE	} 33, Poultry, E.C.
1889	FRANKLIN, BENJAMIN BELGROVE	
1889	GAILEY, JAMES HAMILTON . .	3, Cromartie Road, Hornsey Rise, N.
1887	GALSWORTHY, VINCENT SOMERS	6, Queen's Gate, S.W.

*Passed
Preliminary
Examination.*

STUDENTS.

1888	GARRARD, ARTHUR NORMAN	8, Kensington Court, W.
1889	GARROD, ARTHUR EDWIN	1, Park Hill, Richmond, Surrey.
1888	GARROD, JOHN REBBECK	Vernon Villa, Surbiton Hill, Kingston-on-Thames.
1888	GOVER, WILLIAM BRAMWELL	80, Widmore Road, Bromley, Kent.
1889	GREEN, ALEXANDER ERNEST	Kingsdown Lodge, Ealing Common, W.
1889	GREEN, EDMUND HORACE	28 & 29, St. Swithin's Lane, E.C.
1886	GROVER, ARTHUR	East Lynn, Woodberry Down, Stamford Hill, N.
1888	HADLEY, FRANK	Cambridge Road, Moseley, Birmingham.
1889	HALFORD, ALFRED	8, Pembridge Square, W.
1888	HAMPTON, GEORGE FREDERICK } WILLIAM }	Woodfield, Putney Hill, S.W.
1889	HARRISON, JOHN EDWIN	77, Liverpool Road, Newcastle, Staffs.
1886	HASLAM, DRYLAND, JUN.	Warren House, Caversham, near Reading.
1888	HAWKINS, FRANCIS HENRY GEORGE	Flixton, Bungay, Essex.
1888	HAYWARD, FREDERICK GEORGE	4, Warwick Road, Upper Clapton, N.E.
1889	HEDGER, RALPH W. AHIER	Manor House, Islip, Northamptonshire.
1889	HULBERT, FRANK	Entry Hill House, Bath.
1889	LAKE, VIVIAN DAVEY	42, West Street, Tavistock, Devon.
1888	LAWLEY, FREDERICK WILLIAM	165, Strand, W.C.
1888	LEANING, HENRY JOHN	60, Holland Road, Brixton, S.W.
1889	LEANING, WILLIAM ARTHUR	60, Holland Road, Brixton, S.W.
1888	LICHTENBERG, FRANZ BALZAR	71, Bedford Street, Liverpool.
1889	LONG, EDGAR WALLIS	11, Dowgate Hill, E.C.
1887	LUTENER, OWEN CAPEL HARRISON	Brynygwalia, Oswestry.
1887	MACKENZIE, GEORGE ARCHIBALD	By House, Great Dunmow, Essex.
1889	MERRY, ARTHUR WALKER	Southcourt Farm, Leighton Buzzard, Beds.
1887	MESSOM, FRANCIS WILLIAM	Grosvenor Road, Twickenham.
1888	MOLYNEUX, HERBERT ERNEST	Sefton House, Cazenove Road, Stamford Hill, N.
1889	MORRIS, RICHARD PERCIVAL	Lordship Lodge, Wood Green, N.
1887	MORRISH, HUGH KENNETH	High Street, Stony Stratford, Bucks.
1888	MORTER, SIDNEY PELHAM	Phoenix Villa, Forest Lane, Essex.
1888	MUIR, JAMES	Naworth Estate Office, Brampton, Cumberland.
1889	NICE, GEORGE SAVELL	Downhill House, Bridge Sollars, near Hereford.
1887	NOCKOLDS, ALFRED GEORGE	Saffron Walden, Essex.
1888	OAKLEY, CHRISTOPHER PERCIVAL	10, Waterloo Place, S.W.
1888	OGDEN, MICHAEL GUY	Wensleydale, Wimbledon Common, S.W.

*Passed
Preliminary
Examination.*

STUDENTS.

1889	PALMER, PHILIP SEPTIMUS MILLS	Cottishall, Norwich.
1887	PARRIS, CHARLES JOHN . . .	Glencairn, Cornwallis Terrace, Hastings.
1888	PAYNE, HARRY GEORGE . . .	67, Down's Road, Clapton, E.
1889	PETTY, WILLIAM PARRY . . .	21, Sussex Street, Winchester.
1888	POCHIN, THOS. CLEMENT PARKYNS	Toler Lodge, St. John's Hill, Wimborne, Dorset.
1889	POTTER, HERBERT GEORGE . .	27, Gayton Road, Hampstead, N.W.
1887	PREBBLE, ERNEST . . .	{ Engineer's Office, L. & N. W. Railway Company, Leighton, Beds.
1888	PRICE, MATTHEW BURN . . .	Lymore, Croydon Road, Beckenham, Kent.
1889	ROBINS, PHILIP SEYMOUR . .	79, Alexander Road, South Hampstead, N.W.
1887	ROBINSON, ARTHUR JOHN . .	Oakley Hall, Bishop's Stortford.
1887	ROBINSON, JOHN KENDALL . .	{ Underley Estate Office, Kirkby Lonsdale, West- moreland.
1889	ROBINSON, SHIRLEY HILTON . .	The Elms, Coventry.
1889	ROGERS, PERCY WILBEN . . .	78, Gloucester Road, South Kensington, S.W.
1887	SAVILL, EDWIN	39, New Broad Street, E.C.
1889	SCRUTTON, CLAUDE ALEXANDER .	Mount House, New London Road, Chelmsford.
1888	SEDGWICK, RUPERT WILLIAM .	The Stalls, Worcester.
1887	SMITH, JAMES	8, Oxford Street, High Wycombe.
1888	SPELMAN, WILLIAM WILTON RIX	Ivy House, Eaton, Norwich.
1887	STURLEY, ARTHUR DYSON . .	6, Willow Bridge Road, Canonbury, N.
1888	SUMMERFIELD, JOSEPH CHARLES	Stafford Villa, Garlies Road, Forest Hill, S.E.
1888	SWAINSON, FRANCIS CHARLES JOHN	{ Forest Row Vicarage, East Grinstead, Sussex.
1888	TAYLOR, WILLIAM HARRY . .	Ingleside, Trafalgar Road, Moseley, Birmingham.
1889	THIRTLE, JOHN	The Elms, Banstead, Ewell.
1887	THURGOOD, ALBERT EDWARD .	{ Rosebrook, Abbeville Road North, Clapham Park, S.W.
1889	TUCKETT, PERCIVAL FOX . .	The Hall, Wainfleet, Lincolnshire.
1888	VERITY, ERNEST GEORGE . .	38, Cathcart Road, S.W.
1889	WATSON, CLAUDE HENRY . .	35, Lincoln's Inn Fields, W.C.
1889	WEBSTER, HUGH CALTHROP . .	97, Gresham Street, E.C.
1889	WINDLEY, HENRY CHADWICK .	212, Mansfield Road, Nottingham.

NOTE.—To ensure the regular transmission of the Papers and Notices, it is particularly requested that any changes of address be communicated at once to the Secretary.

Members of the Institution who have Passed the Qualifying Examination.

As Fellows—

ARCH, ARTHUR JOSEPH EDWIN.
 *BEARD, EDWIN THOMAS.
 BEDELLS, CHARLES HERBERT.
 *BENSON, ROBERT ALAN.
 *BIRCH, WALTER DE HOUGHTON.
 BONTOR, FRANK ARTHUR.
 BUCKLAND, ALFRED VIRGOE.
 *BURROWS, ALFRED JOHN.
 DAY, WILLIAM, JUN.
 DICKSON, THOMAS ARTHUR.
 DREW, HENRY ALBAN.
 *FURBER, PERCY NORMAN.
 GIBB, WILLIAM PASHLEY.
 GODFREY, ROBERT.
 HANSELL, REGINALD GODDARD.
 HASLUCK, LANCELOT GERALD.
 *HODGE, LEONARD PERCIVAL.
 HORNE, WILLIAM EDGAR.
 JOHNSON, HENRY.
 *JONAS, HARRY MARSHALL.
 JONES, HENRY ARTHUR.
 KING, ALFRED.
 *LAMBERT, GODFREY CHARLES.

MASSIE, FRANK.
 *MAXWELL, FRANCIS WILLIAM.
 MICHELMORE, ALFRED.
 *MILLWARD, ISAAC.
 MOORE, HAROLD EDWARD.
 NORTH, GEORGE FREDERIC.
 *PAIN, JAMES.
 PAULL, ALAN.
 PETO, JAMES WINDER.
 PILDITCH, PHILIP EDWARD.
 ROLLESTON, WILLIAM GUSTAVUS
 STANHOPE.
 ROODS, ALFRED.
 *RUNDLE, EDWARD COLLINS.
 *SADLER, GEORGE WILLIAM, JUN.
 SILCOCK, THOMAS BALL.
 *SMITH, FRANK WILLIAM.
 SMITH, WILLIAM.
 TIFFEN, JOHN HENRY.
 TREADWELL, HENRY JOHN.
 VERNON, ARTHUR.
 VERNON, WALTER LIBERTY.

* Those Members to whose names a star is affixed, although they have passed the
Fellowship Examination, are not yet transferred to the Class.

† As Professional Associates—

ADKIN, BENIAH WHITLEY.
 ARCH, ARTHUR JOSEPH EDWIN.
 ARNOTT, JOHN.
 AUSTIN, RICHARD, JUN.
 BAKER, CECIL CAUTLEY.
 BALL, JAMES BENJAMIN.

BARRATT, HARRY.
 BATEMAN, ARTHUR CHARLES.
 BEARD, EDWIN THOMAS.
 BEDELLS, CHARLES HERBERT.
 BELCHER, EDWARD JOHN.
 BENSON, ROBERT ALAN.

† This list does not include the names of those who have passed the Examination but
have not yet joined the Institution.

Professional Associates—continued.

- BIRCH, WALTER DE HOUGHTON.
BIRKETT, TOM.
BLUNDELL, HARRY.
BONTOR, FRANK ARTHUR.
BOOTH, JOHN FREDERICK.
BOUSFIELD, EDWIN VAUGHAN DAVENPORT.
BOWER, ARTHUR WENTWORTH CHIVERS.
BRADY, RALPH HOLLINSHED.
BRIGGS, JOHN.
BROWN, WILLIAM EDWARD.
BUCKLAND, ALFRED VIRGOE.
BURROWS, ALFRED JOHN.
BUSHELL, HENRY.
BUSS, FLEETWOOD GEORGE WILLIAM.
CALLENDAR, WILLIAM JACKSON.
CAMPBELL, COLIN.
CARTER, ALFRED PRESLEY.
CARTER, FRANK WELLINGTON.
CAVE, BASIL SHILLITO.
CHALCRAFT, HENRY TERRELL.
CHENEY, EDWIN JOHN.
CHILD, EDMUND HERBERT.
COALES, HERBERT GEORGE.
COLLINGHAM, J. CYRIL LEES.
COLLINS, MARCUS E.
CRAWTER, JOHN, JUN.
CROSLAND, WALTER.
CROUCH, JAMES LEONARD.
DAVEY, HENRY THOMAS.
DAY, WILLIAM, JUN.
DICKSON, THOMAS ARTHUR.
DIXON, FRANCIS EDWARD.
DONE, JOHN JAMES.
DREW, HENRY ALBAN.
DUNNING, BERNARD SIMON.
EAGLAND, WILLIAM FRANCIS.
ELLIS, HERBERT MOATES.
ELLIS, RALPH STAPLES.
EVE, HERBERT TRUSTRAM.
EVES, WILLIAM LIONEL.
FOSTER, FRANK.
FURBER, PERCY NORMAN.
GIBB, WILLIAM PASHLEY.
GIBBON, WILLIAM JACOMB.
GODFREY, ROBERT.
GOLIGHTLY, CHARLES HUGH.
GREEN, THOMAS JOHN.
GREEN, THOMAS JOSEPH.
GREENOP, EDWARD.
GRIMES, RALPH FEARON.
GUNTER, JAMES.
HALKYARD, WILLIAM REDFORD.
HALI, WILLIAM TIMOTHY.
HALTON, HARRY RUSSELL.
HANSELL, REGINALD GODDARD.
HARDING, FREDERICK ALLCROFT.
HASKINS, WILLIAM ALBION.
HASLUCK, LANCELOT GERALD.
HEBBLETHWAITE, CHARLES HENRY.
HENDERSON, HARRY GILBERT.
HENDERSON, RICHARD.
HILLIARD, GEORGE EDWARD.
HODGE, LEONARD PERCIVAL.
HOMAN, HUBERT FRANKLIN.
HOOPER, CECIL HENRY.
IVIMEY, ALFRED.
JOHNSON, HENRY.
JOHNSTON, WALTER HENRY.
JONAS, HARRY MARSHALL.
JONAS, SAMUEL MARSHALL.
JONES, FREDERICK HERBERT.
JONES, HENRY ARTHUR.
JULL, WILLIAM VINCENT.
KING, ALFRED.
KING, WILLIAM ISAAC.
LAMBERT, GODFREY CHARLES.
LEE, JOHN WILFRID.
LOWE, CHARLES ROBERT.
MADDOX, CHARLES RALPH.
MANN, ROBERT BAGSHAW.
MARTIN, HEBER GAMBLING.
MARTIN, THOMAS.
MASSIE, FRANK.
MAXWELL, FRANCIS WILLIAM.

Professional Associates—continued.

MEAD, JOHN HENRY.	SATCHELL, CHARLES.
MELROSE, FRANK.	SELBY, JOHN BASELY.
MILLWARD, ISAAC.	SHAW, ARTHUR.
MIXER, EDWARD.	SMITH, FRANK WILLIAM.
MOORE, HAROLD EDWARD.	STUCKE, WILLIAM HENRY.
MORGAN, ALFRED WALKER.	STURGE, THEODORE.
MOYES, JOHN HELENUS.	STURGESS, JOHN MOORE.
NOCKOLDS, MARTIN CHARLES HUBERT.	SWETENHAM, HENRY.
NORTON, GEORGE PERCY.	TIFFEN, JOHN HENRY.
PAIN, JAMES.	TILLY, HUBERT DOUGLAS.
PALAMOUNTAIN, JOSEPH WILLIAM.	TREADWELL, HENRY JOHN.
PARRY, RICHARD.	TURNER, PERCY.
PATERSON, ANDREW THOMPSON.	VALE, HENRY.
PAULL, ALAN.	VARLEY, THOMAS ERNEST.
PELHAM-CLINTON, HUBERT EDWARD.	WADE, HENRY.
PERKINS, WALTER FREDERICK.	WARTON, WILFRED.
PERKS, SIDNEY.	WATSON, JAMES BRUCE.
PETRE, ROBERT GEORGE.	WATSON, JOHN, JUN.
PHILLIPS, WILLIAM DEARLOVE.	WATSON, RICHARD.
PILDITCH, PHILIP EDWARD.	WEBB, FREDERIC NOEL.
PHYSICK, WALTER FREDERICK.	WEBB, JONAS MARSHALL.
PRATER, THOMAS HERBERT.	WHALLEY, FREDERICK HERBERT.
PRESTON, SAMUEL DAVID.	WHEELER, CHARLES TREVOR OGLE.
RAND, JOHN.	WIGHT, NORMAN.
ROBINSON, ALFRED WHITMORE.	WILLARD, THOMAS.
ROLLESTON, WILLIAM GUSTAVUS STANHOPE.	WILLIAMS, SIDNEY.
ROODS, ALFRED.	WILSON, WILLIAM EDWARD.
RUNDLE, EDWARD COLLINS.	WOOLNOUGH, JOHN WILLIAM.
SADLER, GEORGE WILLIAM, JUN.	WORDLEY, ALEXANDER GEORGE.
SALT, REGINALD NOWELL.	WORTHINGTON, JAMES SCOTT.

Members Transferred since the publication of the January List from the Class of Professional Associates to that of

Fellows—

BIRKETT, TOM	Foxton House, Penrith, Cumberland.
BUCKLAND, ALFRED VIRGOE	66, Cannon Street, E.C.
CLIFTON, WILLIAM EDWARD	7, East India Avenue, Leadenhall Street, E.C.
DREW, JOHN GOULD	15, Queen Street, Exeter.
FISHER, CHARLES BROWNING	Hill Crest, Market Harborough.
GAYFORD, HENRY JOHN	Raynham Estate Office, East Raynham, Norfolk.
HANSELL, REGINALD GODDARD	Lonsdale Chambers, 27, Chancery Lane, W.C.
HASLUCK, LANCELOT GERALD	Green Hill Park, New Barnet, Herts.
HOPE, WILLIAM ELLIOTT	7, East India Avenue, Leadenhall Street, E.C.
LEONARD, HENRY HOLMES	202, Bishopsgate Street Without, E.C.
PURCHASE, EDWARD KEYNES	{ Mansion House Chambers, 11, Queen Victoria Street, E.C.
REID, FRANCIS	Bucksford, Ashford, Kent.
ROLLESTON, WILLIAM GUSTAVUS STANHOPE	{ Grey Friars, Leicester.
RÜNTZ, ERNEST AUGUSTUS	22, Moorgate Street, E.C.
SAVILL, ALFRED, JUN.	39, New Broad Street, E.C.
SCRIVEN, CHARLES HERBERT	Oakley House, Scole, Norfolk.
SMITH, WHEATER	17, Hampton Place, Bradford.
TIFFEN, JOHN HENRY	Conservancy Buildings, Hull.
WATKINS, ROBERT ARUNDEL	Castle Combe, Chippenham, Wilts.

Members who have Died since the publication of the January List.

Fellows—

CLIFTON, EDWARD NORTON	7, East India Avenue, E.C.
FARRAR, JAMES	12, Market Street, Bury.
HUNT, SIR HENRY ARTHUR	45, Parliament Street, S.W.
WAKEFIELD, GODFREY	40, Chancery Lane, W.C.
WILLIAMS, WILLIAM	Salop Road, Oswestry.

Associate—

BAZALGETTE, CHARLES NORMAN	2, Paper Buildings, Temple, E.C.
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Provincial Committees.

JULY 1st, 1889.

BERKS, BUCKS, OXON., AND NORTH WILTS COMMITTEE.

Chairman.

ARTHUR VERNON—High Wycombe, Bucks.

ADKIN, CHARLES DUNCAN . .	Wantage, Berks.
BEEVER, WILLIAM FREDERICK } HOLT }	Greenlands Estate Office, Henley-on-Thames.
BUCKLAND, FRANK BOWRY . .	Windsor.
CASTLE, ARTHUR	18, Merton Street, Oxford.
CASTLE, GEORGE RICHARD . .	Bicester, Oxford.
CASTLE, ROBERT	Merton Street, Oxford.
COOPER, ARTHUR LESLIE . .	86, High Street, Maidenhead.
EGERTON, HUBERT DECIMUS . .	8, New Road, Oxford.
EGGINTON, JOHN	150, Friar Street, Reading.
FERRIS, GEORGE	Milton Manor, Pewsey, Wilts.
FIELD, FRANCIS HAYWARD . .	Merton Street, Oxford.
FRANKLIN, THOMAS	Ascot, near Wallingford.
FRANKLIN, WILLIAM TAYLOR . .	Ascot, near Wallingford.
GALE, JOSEPH JOHN	Market Place, Wallingford.
GALPIN, CHARLES ALEXANDER . .	36, Pembroke Street, Oxford.
GALPIN, JOHN	56, Pembroke Street, Oxford.
GOTTO, FREDERICK EDWARD . .	Stony Stratford, Bucks.
HASLAM, DRYLAND	17, Friar Street, Reading.
HOLIDAY, FREDERICK DEAN . .	Bicester, Oxford.
JEANS, MARK	Marlborough, Wilts.
LITTLE, WILLIAM DAVIS . . .	Middleton Stony, Bicester.
MARSHALL, LIONEL HASLER . .	Chippenham, Wilts.
NAPIER, HENRY BURROUGHS . .	Chippenham, Wilts.
NEATE, ARTHUR WEBB	Hungerford and Newbury.
NORTH, GEORGE FREDERIC . .	Wroxton Estate Office, near Banbury.
NOTTAGE, WILLIAM GRIGGS . .	High Street, Windsor.
PAXTON, EDWARD HAYTON . .	Bicester, Oxford.
PETO, JAMES WINDER	6, Market Place, Reading.

RICH, ROBERT	Didcot, Berks.
SAMUEL, WILLIAM JOHN	Newport Pagnell, Bucks.
SHACKEL, GEORGE	12, The Forbury, Reading.
SMITH, HENRY HERBERT	Chippenham, Wilts.
WATKINS, ROBERT ARUNDEL	Castle Combe, Chippenham.
WATSON, JOHN	Shirburn Castle, Tetsworth.
WATTS, JAMES	Broad Street, Wokingham.
WING, WILLIAM	Caversham, Reading.

Total, 37 Members.

DERBY AND STAFFORD COMMITTEE.

Chairman.

GILSON MARTIN, Chatsworth, Chesterfield.

BOWER, WILLIAM JOHN	6, St. James' Street, Derby.
BRAILSFORD, HENRY	Park Nook, near Derby.
FAWKES, ALGERNON	Sudbury, Derby.
FORSHAW, EDWARD	Basford, Stoke-upon-Trent.
HARDY, RICHARD THOMAS ASH	Estate Offices, Marchington, Staffs.
HEATON, GEORGE HERBERT	Endon, near Stoke-upon-Trent.
HUBBERSTY, HENRY ALFRED	Buxton, Derbyshire.
INGE, CHARLES HENRY	Broom Leasoe, Whittington, Lichfield.
JEUDWINE, WILLIAM WYNNE	Chesterfield.
MARGERESON, CHARLES FREDERICK	New Square, Chesterfield.
MURRAY, GILBERT	Elvaston Estate Office, Derby.
MYNORS, WALTER CHARLES TOWERS	Little Ingestre, Stafford.
PARKIN, JOHN ROBERT	Idridgehay, near Derby.
POPPELWELL, WILLIAM WILLOTT	Imperial Chambers, Derby.
SANDY, HENRY	Newport Road, Stafford.
SHAW, JOHN	College Place, Derby.
TURNOR, EKSUPERIUS WESTON	The Green, Stafford.
WRIGHT, JAMES	Irongate, Derby.

Total, 19 Members.

DEVON AND CORNWALL COMMITTEE.

Chairman.

FRANCIS WILLIAMS DYMOND, Exeter.

BODY, JOHN BOND	Old Town Chambers, Plymouth.
BROWN, GEORGE	Roborough House, Barnstable.

COOPER, JOHN GROVES . . .	Bideford.
DAINTREE, JOHN OSBORN . . .	"Lola," Teignmouth.
DREW, HENRY	15, Queen Street, Exeter.
DREW, HENRY ALBAN	15, Queen Street, Exeter.
DREW, JOHN	15, Queen Street, Exeter.
DREW, JOHN GOULD	15, Queen Street, Exeter.
ELLIOTT, CHARLES	The Fawns, Ermington, Ivy Bridge.
FOSTER, JOSEPH BURGESS . .	4, Cambridge Street, Plymouth.
LETHBRIDGE, WALTER . . .	1, Leigham Villas, Plymouth.
LOCK, WILLIAM HENRY . . .	Instow.
MICHELMORE, ALFRED . . .	Berry House, Totnes.
RENDELL, ARTHUR STEPHEN .	Market Terrace, Newton Abbot.
SMYTH-RICHARDS, GEORGE COBLEY	Wistlandpound, and 6, Castle Street, Barnstaple.
SYMONS, PHILIP	Fore Street, Totnes.
STOOKE, JAMES	Courtenay Street, Newton Abbot.
TANNER, JOHN MELHUISE . .	Wembworthy.
THORNE, ARNOLD	Cross Street, Barnstaple.
WARD, DANIEL	Hewton, Beerferris.
WARD, FRANK	Burnville, Bridestowe.
WARE, CHARLES EDWIN . . .	Gandy Street Chambers, Exeter.
WATT, ALEXANDER	Princetown.
WINDER, GEORGE ALEXANDER .	Escot Estate Office, Fairmile, Ottery St. Mary.

Total, 25 Members.

HANTS AND SOUTH WILTS COMMITTEE.

Chairman.

CHARLES BOVILL SMITH, Wickham, Hants.

ARNOLD, FRANCIS	Hambledon, Hants.
BAIRD, JONATHAN PEEL . . .	Estate Office, Somerley, Ringwood, Hants.
BATH, FRED.	Crown Chambers, Salisbury.
BIRD, JAMES BINFIELD . . .	West Cowes, Isle of Wight.
BIRD, JAMES BINFIELD, JUN. .	West Cowes, Isle of Wight.
BLAKE, FREDERICK	130, Queen Street, Portsea, Hants.
CANNING, WILLIAM BROWNE . .	Salisbury.
CLARKE, ALFRED DUDLEY . . .	Southwick Estate Office, Fareham.
COMELY, JOHN GILL	Winchester, Hants.
CRUSE, EDMUND	34, High Street, Warminster, Wilts.
CURTIS, CHARLES EDWARD . .	Deanyers, Alton, Hants.
EAMES, EDWARD	Stoke Manor, near Alresford.
ELLEN, FREDERICK CHARLES . .	Andover.
GATER, CALEB WILLIAM . . .	Salisbury.

HALL, ERNEST	166, Queen Street, Portsea, Hants.
HANNEN, REGINALD ST. JOHN . .	Fordingbridge, Salisbury.
HARRIS, JAMES	Winchester.
HERBERT, ALLAN	The Market Place, Andover.
HILL, WILLIAM BURROUGH . . .	2, Albion Place, Southampton.
JONES, HENRY PARR	Portway House, Warminster.
JURD, WILLIAM	10, Oxford Street, Southampton.
KENT, GEORGE EDWARD	Clarendon Road, Southsea.
KING, THOMAS	Pembroke House, Portsmouth.
KING, SIR WILLIAM DAVID . . .	Lynwood, Waverley Road, Southsea.
LEMON, JAMES	Southampton.
LIGHTFOOT, HENRY LE BLANC . .	Lower Lawn, Tisbury, Salisbury.
MARVIN, ALBERT EDWARD . . .	Mare Hill, Carisbrooke.
NEWMAN, FRANCIS	Ryde, Isle of Wight.
PICKSTOCK, JOHN	Castle Hill, Winchester.
RAWLENCE, ERNEST ALFRED . . .	Tower House, Salisbury.
RAWLENCE, JAMES	Salisbury.
RAYNBIRD, HUGH EDWARD . . .	Basingstoke, Hants.
RIGDEN, HENRY WILLIAM . . .	Salisbury.
RIGDEN, JOHN LAMBE	Belle Vue, Salisbury.
ROKER, MITCHEL JOHN	Bank Chambers, Bournemouth.
RUTHERFORD, JAMES AUGUSTINE .	Highclere Park, near Newbury.
SQUAREY, ELIAS PITTS	The Moot, Downton, Salisbury.
STUDDY, THOMAS EDWARD . . .	Leckford Down, Stockbridge.
WALLINGTON, JOHN ARTHUR BEACH .	Basingstoke, Hants.
WESTBURY, GEORGE HENRY . . .	The Knoll, Andover.
WESTBURY, GILES	Andover.

Total, 42 Members.

KENT COMMITTEE.

Chairman.

GEORGE LANGRIDGE, Tunbridge Wells.

BALLARD, EDMUND	Elwick House, Ashford.
BRACKETT, ARTHUR WILLIAM . . .	27, High Street, Tunbridge Wells.
BRACKETT, WILLIAM	27, High Street, Tunbridge Wells.
BURROWS, ALFRED JOE	Surrenden Estate Office, Pluckley.
COBB, HERBERT MANSFIELD . . .	Higham.
COBB, ROBERT LAKE	Higham.
COBHAM, CHARLES	The Shrubbery, Gravesend.
COOKE, HENRY	Thong, near Gravesend.
CRONK, EDWYN EVANS	Sevenoaks.

CRONK, FRANK	Sevenoaks.
CRONK, WILLIAM HENRY	Sevenoaks.
DANN, HENRY	Bexley.
DAY, WILLIAM, JUN.	23, High Street, Maidstone.
ELGAR, J. EDWARD	Crockshard, Wingham.
FRY, GEORGE FREDERICK	46, London Road, Dover.
HAYWARD, HENRY	Dover.
JACKSON, WILLIAM TRESS	117, High Street, Sittingbourne.
LANGRIDGE, WILLIAM	The Great Hall, Tunbridge Wells.
LEPPER, JOHN HARRAGE	Town Hall, Bromley.
NEAME, FREDERICK, JUN.	Macknade, Faversham.
NEVE, HERBERT	Hole Park, Rolvenden.
PAYNE, FREDERICK	Town Hall, Bromley.
REID, FRANCIS	Bucksford, Ashford.
ROPER, WILLIAM	Lansdowne Place, Tunbridge Wells.
SEYMOUR, RICHARD ARTHUR HA- MILTON	} Preston Hall Farm, Aylesford.
SLATER, GEORGE	
TOMPSETT, WILLIAM ROBERT	182, High Street, Tonbridge, and Paddock Wood.
TOOTELL, CHARLES	13, King Street, Maidstone.
TOOTELL, JOSEPH	13, King Street, Maidstone.
TROUTBECK, ROBERT	Maidstone.
WACHER, THOMAS	Upper Bridge Street, Canterbury.
WALMSLEY, ARTHUR THOMAS	Harbour Board Offices, Dover.
WATERMAN, JAMES	Ashford.
WATERMAN, RICHARD	20, Week Street, Maidstone.
WEBB, GEORGE	Tunstall, Sittingbourne.
WILKS, RICHARD	Little Mongeham, near Deal.

Total, 37 Members.

LANCASHIRE AND CHESHIRE COMMITTEE.

Chairman.

JOHN CROSS, 77, King Street, Manchester.

ADDIE, PETER	30, Winckley Square, Preston.
BANCROFT, HENRY	83, Moseley Street, Manchester.
BECKWITH, HENRY LANGTON	9, Cook Street, Liverpool.
BERTWISTLE, JAMES	1, Tackett's Street, Blackburn.
BOWDEN, JOHN	14, Ridgefield, Manchester.
BRADY, CHARLES ALDIS	17, Warren Street, Stockport.
BRIDGFORD, ERNEST JAMES	28, Cross Street, Manchester.
BRIDGFORD, ROBERT, C.B.	28, Cross Street, Manchester.

DAVIES, JOHN	Mollington, Chester.
DICKSON, THOMAS ARTHUR	28, Cross Street, Manchester.
DORNING, ELIAS	Manchester.
EAGLE, WILLIAM	77, King Street, Manchester.
FAIR, JACOB WILSON	{ Haigh Hall, Wigan, and 8, Winckley Street, Preston.
FAIR, JAMES STRETTON	4, Winckley Street, Preston.
FAIR, THOMAS	Estate Offices, Lytham.
FLETCHER, THOMAS	Dukenhalgh, Clayton-le-Moors, near Accrington.
HANSON, AMOS	35, Church Street, St. Helen's.
HARDING, JOSEPH	49, Lune Street, Preston.
HARGRAVES, STEPHEN	{ St. Andrew's Chambers, Albert Square, Man- chester.
HOLDEN, JOHN	64, Cross Street, Manchester.
HOLMES, JAMES	23, Delamere Street, Ashton-under-Lyne.
JACKSON, CHARLES	25, Brazennose Street, Manchester.
KIRBY, EDMUND	5, Cook Street, Liverpool.
LANCASTER, CHARLES HOLLAND	York Buildings, 14, Dale Street, Liverpool.
LINAKER, HENRY	Frodsham, Chester.
MCALL, GEORGE	33, Victoria Chambers, Market Place, Blackburn.
MACIVER, COLIN	23, Bold Street, Warrington.
MILLS, WILLIAM EDWARD	49, Hamilton Square, Birkenhead.
MURGATROYD, JAMES	23, Strutt Street, Manchester.
NEVILE, HENRY WILLIAM	{ Broughton Estate Office, 8, John Dalton Street, Manchester.
PAIN, COARD SQUAREY	14, North John Street, Liverpool.
PARK, WILLIAM PHILIP	23, Guildhall Street, Preston.
PARKER, THE HON. CECIL } THOMAS.	Eccleston, Chester.
PIERSON, CHARLES	10, Marsden Street, Pall Mall, Manchester.
RABY, JOSEPH WALKER	78, Cross Street, Manchester.
RABY, WILLIAM	78, Cross Street, Manchester.
RADFORD, WILLIAM	1, Princess Street, Manchester.
REA, JOHN MARCUS BEAUMONT	8, Winckley Street, Preston.
SCOVELL, JOHN	Oulton Park, Tarporley, Cheshire.
SMITH, JOHN THOMPSON	Tattondale, Knutsford, Cheshire.
STATTER, THOMAS	Standhall, Whitefield, Manchester.
THOMPSON, EDWARD JAMES	The Willows, Moss Lane, Timperley, Manchester.
VAWSEE, ROBERT	17, Cooper Street, Manchester.
VEEVERS, RICHARD	Wonnington, Fulwood Park, Preston.
WHALLEY, HENRY SHAW	90, Northgate Street, Chester.
WHITE, JOHN	Warrington, Lancashire.
WILSON, THOMAS SILK	Albert Square, Manchester.

Total, 48 Members.

LEICESTERSHIRE, NORTHAMPTONSHIRE, & RUTLAND COMMITTEE.

Chairman.

JOHN FOWKE LANCELOT ROILESTON, Grey Friars, Leicester.

BOLAM, CHARLES GODFREY . . .	{ Estate Office, Boughton House, Kettering, Northamptonshire.
CAVE, THOMAS NEWMAN . . .	Horton, Northampton
CLARE, EDWARD LOVELL . . .	33, Friar Lane, Leicester.
CLARE, WILLIAM HARCOURT } LOVELL }	33, Friar Lane, Leicester.
CLOUGH-TAYLOR, HORACE GEORGE	Friar Lane, Leicester.
DRAPER, ARTHUR THOMAS . . .	Friar Lane, Leicester.
EDWARDES, CHARLES BIDWELL .	The Precincts, Peterborough.
EVERARD, JOHN BREEDON . . .	6, Millstone Lane, Leicester.
FISHER, CHARLES BROWNING .	Hill Crest, Market Harborough.
FISHER, EDWARD KNAPP . . .	Market Harborough, Leicestershire.
GERMAN, GEORGE	Ashby-de-la-Zouch.
GERMAN, JOHN	Ashby-de-la-Zouch.
GODDARD, JOSEPH	Market Street, Leicester.
GOODACRE, ROBERT JOHNSON .	Friar Lane, Leicester.
GREEN, VALENTINE	Knipton, near Grantham,
HODSON, GEORGE	Town Hall, Loughborough.
HUMPHREYS, HENRY	Woodhouse, Loughborough.
JOYCE, JOHN HALL	{ Blackfordby, Leicestershire, near Burton-on- Trent.
LAURANCE, JOHN	Sexton Barns, Peterborough.
LAW, EDMUND	29, Abingdon Street, Northampton.
MILES, WILLIAM FREDERICK .	Horsefair Street, Leicester.
PARNELL, ROBERT	Oundle, Northamptonshire.
ROLLESTON, WILLIAM GUSTAVUS } STANHOPE }	Grey Friars, Leicester.
THORPE, WILLIAM	Nailstone, Hinckley.
WOOLLEY, WILLIAM EDWARD .	Loughborough.

Total, 26 Members.

NORFOLK AND SUFFOLK COMMITTEE.

Chairman.

EDMUND BECK, Sandringham.

ATKINS, SYDNEY GEORGE . . .	The Hall, Coston, Wymondham, Norfolk.
BARKER, CALEB	Estate Office, Shadwell, Thetford.

BECK, EDWARD WILLIAM . . .	Melton Constable, East Dereham.
COOTE, GEORGE	Smeetham Hall, Sudbury.
COVERDALE, HENRY	Cossey, Norfolk.
FREUER, WILLIAM	West Rudham, Swaffham.
GAYFORD, HENRY JOHN . . .	Estate Office, Raynham, Norfolk.
HAWKINS, CHARLES	Downham Market, King's Lynn.
HORNOR, CHARLES JARED . . .	Prince of Wales Road, Norwich.
HORNOR, FRANCIS	Queen Street, Norwich.
MILLS, SAMUEL MEALING . . .	Orford Hill, Norwich.
ROGERS, ERNEST EDWARD . . .	1, Prince of Wales Road, Norwich.
ROSE, THOMAS	13, Bank Street, Norwich.
SALTER, WILLIAM HERBERT . .	The Hall, Attleborough, Norfolk.
SCOTT, HENRY LACY	Bury St. Edmund's.
SCRIVEN, CHARLES HERBERT . .	Scole, Norfolk.
SIMPSON, ROBERT THOMAS . . .	Horsecroft, Bury St. Edmund's.
SPURLING, HENRY	81, Prince's Street, Ipswich.
TURNER, WILLIAM	1, Butter Market, Ipswich.
WRIGHT, WILLIAM EDWARD . . .	King's Lynn.

Total, 21 Members.

NORTHERN COUNTIES COMMITTEE.

Chairman.

WILLIAM T. SCARTH, Raby Castle, Darlington.

ARMSTRONG, THOMAS JOHN . . .	14, Hawthorne Terrace, Newcastle.
BAINBRIDGE, ROBERT STAGG . .	Keverstone, near Staindrop, Durham.
BIRKETT, TOM	Foxton House, Penrith, Cumberland.
BOLAM, WILLIAM THOMAS . . .	Cross House, Westgate Road, Newcastle.
BOWMAN, JOHN JAMES	32, English Street, Carlisle.
BRYDON, ROBERT	The Dene, Seaham Harbour, Durham.
CURRY, HENRY JOHN	58, High Street, Stockton-on-Tees.
DENT, RALPH JOHN	Streatham House, Darlington.
EADE, ARTHUR WILLOUGHBY } FRENCH }	Feethams, Darlington.
HAYTON, JOSEPH WILLIAM . . .	Devonshire Chambers, Carlisle.
HEDLEY, JOHN HUNT	55, John Street, Sunderland.
HEDLEY, THOMAS FENWICK . . .	Sunderland.
HEDLEY, THOMAS FENWICK, JUN.	Sunderland.
HESKETT, WILLIAM JAMES . . .	24, King Street, Penrith, Cumberland.
HOLME, JOHN	Owlet Ash, Milnthorpe, Westmoreland.
HUDSON, JAMES	Penrith, Cumberland.
MINTER, WILLIAM	81, Bondgate, Darlington.
PARMETER, FRANK	South View House, West Parade, Newcastle.

POTTS, JOSEPH, JUN.	North Cliff, Roker, Sunderland.
PUNCHARD, FREDERICK	{ Underley Estate Office, Kirkby Lonsdale, West- moreland.
SAMPLE, THOMAS	
STANLEY-DOUGSON, STANLEY	{ Estate Office, Somerset House, Whitehaven. Cumberland.
DICKENSON	
TAYLOR, JOHN WILLIAM	33, Westgate Road, Newcastle.
TOMLINSON, THOMAS	Estate Office, Alnwick Castle.
WAISTEEL, WILLIAM	{ Barnard Castle, Durham, and 6, Arden Street, Darlington.
WALL, GEORGE YOUNG	
WALLACE, HENRY	Trench Hall, Gateshead-on-Tyne.
WEBSTER, ALEXANDER	100, Highgate, Kendal, Westmoreland.
WILSON, JACOB	Chillingham, Alnwick.
Total, 30 Members.	

SOMERSET, DORSET, AND BRISTOL COMMITTEE.

Chairman.

EDWIN HIPPISEY, Wells, Somerset.

ALLEN, GEORGE	Estate Offices, Stalbridge, Dorset.
BENNETT, THOMAS OATLEY	Bruton, Somerset.
COMBES, CYRUS	Misterton, Crewkerne.
CRICKMAY, GEORGE RACKSTROW	St. Thomas Street, Weymouth.
DANIEL, HARRY AUGUSTUS HOOD	Chasefield, Fishponds, near Bristol.
HEARD, HERBERT	Shepton Mallet, Somerset.
HUSSEY, FRANK TOOZE	The Grove, Cheddon Fitzpaine, Taunton.
KNOOLYS, JAMES EDWARD	Fitzhead Court, Taunton.
MUNRO, PHILIP	{ 2, St. Stephen's Chambers, New Baldwin Street, Bristol.
PARSONS, FRANK DONISTHORPE	
PARSONS, HENRY	Misterton, Crewkerne.
PARSONS, ROBERT MAURICE	{ Misterton, Crewkerne.
PETERS	
SILCOCK, THOMAS BALL	14, Abbey Churchyard, Bath.
SPACKMAN, HENRY	6, Terrace Walks, Bath.
STURGE, ROBERT FOWLER	34, Corn Street, Bristol.
STURGE, WILLIAM	34, Corn Street, Bristol.
THOMAS, JOSIAH	Athenæum Chambers, Nicholas Street, Bristol.
TURNBULL, THOMAS JOHN	Wimbourne St. Giles, near Cranbourne.
WAINWRIGHT, CHARLES RAWLIN- SON	{ Shepton Mallet.
WAINWRIGHT, CHARLES RAWLIN- SON, JUN.	

Total, 21 Members.

Local Distribution of Members.

BEDFORDSHIRE.

BEDFORD.

Fellows :—

Eve: John Richard.
Fenning: Herbert Samuel.
Stafford: Robert Barry.
Yeoman: George Dundas.

Professional Associates :—

Eve: Herbert Trustram.
Weston: Joseph Aurelius.

GREAT BARFORD.

Fellow :—

Haughton: William Hoghton.

SILSOE.

Fellow :—

Trethewy: Henry.

WOBURN.

Professional Associate :—

Preston: Samuel David.

BERKSHIRE.

ASCOT.

Fellows :—

Franklin: Thomas.
Franklin: William Taylor.

DIDCOT.

Fellow :—

Rich: Robert.

Professional Associate :—

Eagland: William Francis.

HUNGERFORD.

Fellow :—

Neate: Arthur Webb.

MAIDENHEAD.

Professional Associate :—

Tilly: Hubert Douglas.

NEWBURY.

Fellow :—

Neate: Arthur Webb.

Professional Associate :—

Satchell: Charles.

READING.

Fellows :—

Egginton: John.
Haslam: Dryland.
Peto: James Winder.
Shackel: George.
Wing: William.

WALLINGFORD.

Fellow :—

Gale: Joseph John.

Associate :—

Wells: Alfred Dodd.

BERKSHIRE—continued.

WANTAGE.

Fellow :—

Adkin: Charles Duncan.

Professional Associate :—

Belcher: Edward John.

WINDSOR.

Fellows :—

Buckland: Frank Bowry.

Nottage: William Griggs.

WOKINGHAM.

Fellow :—

Watts: James.

BUCKINGHAMSHIRE.

HIGH WYCOMBE.

Fellow :—

Vernon: Arthur.

Professional Associate :—

Phillips: William Dearlove.

Associate :—

Clarke: Daniel.

LEIGHTON BUZZARD.

Professional Associate :—

Bruce: Robert Knight.

MAIDENHEAD.

Fellow :—

Cooper: Arthur Leslie.

NEWPORT PAGNELL.

Fellow :—

Samuel: William John.

STONY STRATFORD.

Fellow :—

Gotto: Frederick Edward.

CAMBRIDGESHIRE.

CAMBRIDGE.

Fellows :—

Grain: Arthur Tress.

Jonas: John Carter.

Rowe: Richard Reynolds.

Wright: Thomas.

Professional Associates :

Jonas: Harry Marshall.

Jonas: Samuel Marshall.

Moyes: John Helenus.

ELY.

Fellow :—

Bidwell: Charles.

LITTLEPORT.

Professional Associate :—

Martin: Heber Gambling.

MARCH.

Fellow :—

Little: William Cutlack.

CHESHIRE.

BIRKENHEAD.

Fellow :—

Mills: William Edward.

Professional Associate :—

Whalley: Frederick Herbert.

CHESTER.

Fellow :—

Whalley: Henry Shaw.

Professional Associate :—

Whalley: Frederick Herbert.

ECCLESTON.

Fellow :—

Parker: The Hon. Cecil Thomas.

FRODSHAM.

Fellow :—

Linaker: Henry.

KNUTSFORD.

Fellow :—

Smith: John Thompson.

Professional Associate :—

Halkyard: William Redford.

MOLLINGTON.

Fellow :—

Davies: John.

NANTWICH.

Professional Associate :—

Homfray: William Francis.

NORTHWICH.

Professional Associate :—

Tarleton: Roger.

STOCKPORT.

Fellow :—

Brady: Charles Alldis.

Professional Associate :—

Brady: Ralph Hollingshed.

TARPORLEY.

Fellow :—

Scovell: John.

CUMBERLAND.

CARLISLE.

Fellows :—

Bowman: John James.

Hayton: Joseph William.

PENRITH.

Fellows :—

Birkett: Tom.

Heskett: William James.

Hudson: James.

WHITEHAVEN.

Fellow :—

Stanley-Dodgson: Stanley Dickinson.

DERBYSHIRE.

BRETTY.

Professional Associate :—

Campbell: Colin.

BUXTON.

Fellow :—

Hubbersty: Henry Alfred.

DERBYSHIRE—continued.

CALOW.

Professional Associate :—

Thorpe: Christopher.

CHESTERFIELD.

Fellows :—

Jendwine: William Wynne.

Margereson: Charles Frederick.

Martin: Gilson.

DERBY.

Fellows :—

Bower: William John.

Brailsford: Henry.

Murray: Gilbert.

Parkin: John Robert.

Popplewell: William Willott.

Shaw: John.

Member of Council.

Wright: James.

Professional Associates :—

Fuller: Thomas Alfred.

McCallum: Peter Service.

Shaw: John, Jun.

Associate :—

Strutt: Frederick, The Hon.

SUDBURY.

Fellow :—

Fawkes: Algernon.

DEVONSHIRE.

BARNSTAPLE.

Fellows :—

Brown: George.

Smyth-Richards: George Cobley.

Thorne: Arnold.

BEERFERRIS.

Fellow :—

Ward: Daniel.

BIDEFORD.

Fellow :—

Cooper: John Groves.

BRIDESTOWE.

Fellow :—

Ward: Frank.

BROAD-CLYST.

Associate :—

Acland: Sir Thomas Dyke, Bart.

EXETER.

Fellows :—

Drew: Henry.

Drew: Henry Alban.

Drew: John.

Drew: John Gould.

Dymond: Francis Williams.

Ware: Charles Edwin.

DEVONPORT.

Associate :—

Venning: John James Edgcombe.

INSTOW.

Fellow :—

Lock: William Henry.

DEVONSHIRE—*continued.*

IVY BRIDGE.

Fellow :—
Elliott: Charles.

KINGSBRIDGE.

Professional Associate :—
Watson: Richard.

LUNDY ISLAND.

Professional Associate :—
Wright: Thomas Hawkins.

NEWTON ABBOT.

Fellows :—
Rendell: Arthur Stephen.
Stooke: James.

PAIGNTON.

Professional Associate :—
Pridham: John Lawrence.

PLYMOUTH.

Fellows :—
Body: John Bond.
Foster: Joseph Burgess.
Lethbridge: Walter.

PRINCETOWN.

Fellow :—
Watt: Alexander.

OTTERY ST. MARY.

Fellow :—
Winder: George Alexander.

TAVISTOCK.

Professional Associate :—
Rundle: Edward Collins.

TEIGNMOUTH.

Fellow :—
Daintree: John Osborn.

TOTNES.

Fellow :—
Michelmores: Alfred.
Symons: Philip.

WEMBORTHY.

Fellow :—
Tanner: James Melhuish.

DORSETSHIRE.

EVERSHOT.

Professional Associate :—
Wells: William Howley.

MORETON.

Associate :—
Scott: The Hon. Henry Robert.

STALBRIDGE.

Fellow :—
Allen: George.

WEYMOUTH.

Fellow :—
Crickmay: George Rackstrow.

WIMBORNE.

Fellow :—
Turnbull: Thomas John.

DURHAM.

DARLINGTON.

Fellows :—
Dent: Ralph John.
Eade: Arthur Willoughby French.
Minter: William.
Scarth: William T.
Waistell: William.
Professional Associate :—
Smith: George Cecil.

DURHAM.

Fellows :—
Wall: George Young.
Waistell: William.
Professional Associate :—
Rolandson: Christopher.

GATESHEAD-ON-TYNE.

Fellow :—
Wallace: Henry.

KEVERSTONE.

Fellow :—
Bainbridge: Robert Stagg.

SEAHAM-HARBOUR.

Fellow :—
Brydon: Robert.

STOCKTON-ON-TEES.

Fellow :—
Curry: Henry John.

SUNDERLAND.

Fellows :—
Hedley: John Hunt.
Hedley: Thomas Fenwick.
Hedley: Thomas Fenwick, Jun.
Potts: Joseph, Jun.

ESSEX.

ARDLEIGH.

Fellow :—
Fenn: John.

BOREHAM.

Fellow :—
Moore: Harold Edward.

BRAINTREE.

Fellow :—
Vaizey: John George.

CASTLE HEDINGHAM.

Fellow :—
Balls: James Mayhew.

CHELMSFORD.

Fellows :—
Chancellor: Frederick.
Hilliard: George Bridge.
Professional Associates :—
Christy: Archibald Ernest.
Hilliard: George Edward.
Petre: The Hon. Henry William.
Petre: Robert George.
Phillips: George Cawkwell.
Associate :—
Gepp: Charles Bramston Osborne.

CHIGWELL.

Fellow :—
Savill: Alfred.

ESSEX—continued.

COLCHESTER.

Fellow :—

Fenn: John.

Professional Associates :—

Grimwade: Henry.

Lee: John Wilfrid.

EPPING.

Fellow :—

Sworder: Hugh.

GRAYS.

Fellow :—

Cobham: Charles.

ILFORD.

Professional Associate :—

Thompson: William.

INGATESTONE.

Fellow :—

Coverdale: Frederick John.

LEYTONSTONE.

Professional Associate :—

Theobald: Henry.

MALDON.

Fellow :—

Parker: Charles Alfred.

RAINHAM.

Fellow :—

Blewitt: Edward Robert.

RICKLING.

Fellow :—

Judd: Francis Savile Harry.

SAFFRON WALDEN.

Fellow :—

Nockolds: Martin.

Professional Associate :—

Nockolds: Martin Charles Hubert.

SOUTHEND-ON-SEA.

Professional Associate :—

Tapp: Arthur.

STANSTED.

Professional Associate :—

Webb: Frederic Noel.

WITHAM.

Professional Associate :—

Strutt: The Hon. Edward Gerald

WOODFORD.

Fellows :—

Kemsley: Joseph William.

Lee: Philip Shirling.

GLOUCESTERSHIRE.

BRISTOL.

Fellows :—

Daniel: Harry Augustus Hood.

Munro: Philip.

Sturge: Robert Fowler.

Sturge: William.

Past-President.

Thomas: Josiah.

Professional Associates :—

Scammell: Thomas.

Sturge: Theodore.

GLOUCESTERSHIRE—continued.

CHELTENHAM.

Fellows :—

Cox: George James.

Sadler: George William.

Sanders: Thomas.

Villar: James.

Professional Associate :—

Henderson: Harry Gilbert.

CIRENCESTER.

Fellow :—

Anderson: Robert, Jun.

Associate :—

Kinch: Edward.

GLOUCESTER.

Fellow :—

Knowles: William.

Professional Associate :—

Knowles: Henry.

STROUD.

Professional Associate :—

Pelham-Clinton: Hubert Edward

TETBURY.

Professional Associate :—

Golightly: Charles Hugh.

HAMPSHIRE.

ALRESFORD.

Fellow :—

Eames: Edward.

ALTON.

Fellow :—

Curtis: Charles Edward.

ANDOVER.

Fellows :—

Ellen: Frederick Charles.

Herbert: Allan.

Westbury: George Henry.

Westbury: Giles.

Professional Associate :—

Hooper: Alfred Frederick.

BASINGSTOKE.

Fellows :—

Raynbird: Hugh Edward.

Wallington: John Arthur Beach.

Professional Associates :—

Prater: Thomas Herbert.

Simmons: Charles Franklin.

BISHOP'S WALTHAM.

Professional Associate :—

Austin: Richard, Jun.

BOURNEMOUTH.

Fellow :—

Roker: Mitchel John.

CARISBROOKE.

Fellow :—

Marvin: Albert Edward.

CRONDALL.

Associate :—

Seth-Smith: Frederick.

HAMPSHIRE—continued.

EAST TYTHERLEY.

Professional Associate :—
Robey: Robert.

FAREHAM.

Fellow :—
Clarke: Alfred Dudley.

FORDINGBRIDGE.

Fellow :—
Hannen: Reginald St. John.

HAMBLEDON.

Fellow :—
Arnold: Francis.

HIGHCLERE.

Fellow :—
Rutherford: James Augustine.

MICHELDEVER.

Professional Associate :—
Pain: James.

PORTSMOUTH.

Fellow :—
King: Thomas.

PORTSEA.

Fellows :—
Blake: Frederick.
Hall: Ernest.
Kent: George Edward.
King: Thomas.
King: Sir William David

RINGWOOD.

Fellow :—
Baird: Jonathan Peel.

RYDE.

Fellow :—
Newman: Francis.

SOUTHAMPTON.

Fellows :—
Hill: William Burrough.
Jurd: William.
Lemon: James.
Professional Associate :—
Perkins: Walter Frank.

SOUTHSEA.

Fellows :—
Kent: George Edward.
King: Sir William David.

STOCKBRIDGE.

Fellow :—
Studdy: Thomas Edward.

TOTTON.

Professional Associate :—
Paterson: Andrew Thompson.

WEST COWES.

Fellows :—
Bird: James Binfield.
Bird: James Binfield, Jun.
Professional Associate :—
Ball: James Benjamin.

HAMPSHIRE—continued.

WINCHESTER.

Fellows :—
Comely: John Gill.
Harris: James.
Pickstock: John.
Professional Associate :—
Newton: Thomas Edwin.

WICKHAM.

Fellow :—
Smith: Charles Bovill.

HEREFORDSHIRE.

HEREFORD.

Fellows :—
Apperley: William Havard.
Brown: John Powles.
Haywood: Henry.
Haywood: William Matthews.
Parker: John.
Professional Associate :—
Hewitt: William.

YATTON.

Fellow :—
Ward: John George Rodney.

HERTFORDSHIRE.

BARKWAY.

Fellow :—
Adams: Charles Frederic.
Professional Associate :—
Balding: Albert.

BISHOPS STORTFORD.

Professional Associate :—
Robinson: Martin Catlin.

CHESHUNT.

Fellows :—
Crawter: John.
Crawter: John, Jun.
Debenham: Frank Gissing.
Professional Associate :—
Halton: Harry Russell.

ELSTREE.

Fellow :—
Burnett: George John Mulcaster.

HEMEL HEMPSTEAD.

Fellow :—
Robinson: Nathaniel Wishart.

HERTFORD.

Fellow :—
Austin: Russell Gardiner.
Professional Associate :—
Norris: Walter Henry.

NEW BARNET.

Fellows :—
Hasluck: Lancelot Gerald.
Taylor: Edward Fergusson.

ROYSTON.

Fellow :—
Thurnall: John Edward.

HERTFORDSHIRE—*continued.*

SAWBRIDGEWORTH.

Professional Associate :—
Crawley: William Jeeves.

ST. ALBANS.

Fellow :—
Harding: Sidney Loughurst.

Professional Associate :—
Low: Robert John.

TRING.

Fellows :—
Brown: Frank John.
Brown: William.
Foulkes: Septimus Giffard.

WARE.

Fellow :—
Beningfield: Henry.

WATFORD.

Fellow :—
Weall: John.
Professional Associates :—
Ayres: Charles Pryor.
Brown: William Edward.
Associate :—
Thomas: Hubert.

HUNTINGDONSHIRE.

CONNINGTON.

Fellow :—
Thomson: William Cunningham.

HUNTINGDON.

Fellow :—
Looker: John.

ST. NEOTS.

Fellow :—
Peppercorn: John Hutchinson.

KENT.

ASHFORD.

Fellows :—
Ballard: Edmund.
Reid: Francis.
Waterman: James.
Professional Associates :—
Brown: Alexander
Burrows: Alfred John.

AYLESFORD.

Fellow :—
Seymour: Richard Arthur Hamilton.

BEXLEY.

Fellow :—
Dann: Henry.

BROMLEY.

Fellows :—
Lepper: John Harrage
Payne: Frederick.

KENT—*continued.*

CANTERBURY.

Fellows :—
Slater: George.
Wacher: Thomas.
Professional Associate :—
Harvey: John James Sayer.

DOVER.

Fellows :—
Fry: George Frederick.
Hayward: Henry.
Walmisley: Arthur Thomas.

FARNINGHAM.

Professional Associate :—
Hodsoll: William, Jun.

FAVERSHAM.

Fellow :—
Neame: Frederick, Jun.

GRAVESEND.

Fellow :—
Cobham: Charles.

HIGHAM.

Fellows :—
Cobb: Robert Lake,
Cobb: Herbert Mansfield.

IGHTHAM.

Associate :—
Luard: Major-Gen. Chas. Edw., R.E.

LITTLE MONGEHAM.

Fellow :—
Wilks: Richard.

MAIDSTONE.

Fellows :—
Day: William, Jun.
Tootell: Charles.
Tootell: Joseph.
Troutbeck: Robert.
Waterman: Richard.

PADDOCK WOOD.

Fellow :—
Tompsett: William Robert.

PLUCKLEY.

Fellow :—
Burrows: Alfred Joe.

ROCHESTER.

Professional Associate :—
Homan: Hubert Franklin.

ROLVENDEN.

Fellow :—
Neve: Herbert.

SEVENOAKS.

Fellows :—
Bigge: Charles Selby.
Cronk: Edwyn Evans.
Cronk: Frank.
Cronk: William Henry.
Professional Associate :—
Green: Thomas John.

SIDCUP.

Fellow :—
Snelling: Henry.

KENT—continued.

SITTINGBOURNE.

Fellows :—

Jackson : William Tress.

Webb : George.

Professional Associate :—

Cowper : Richard William.

SUTTON-AT-HONE.

Professional Associate :—

Russell : James Elgar.

SWANLEY.

Professional Associate :—

Hooper : Cecil Henry.

THONG.

Fellow :—

Cooke : Henry.

TUNBRIDGE.

Fellow :—

Tompsett : William Robert.

Professional Associates :—

Martin : Thomas.

Sturgess : John Moore.

TUNBRIDGE WELLS.

Fellows :—

Brackett : Arthur William.

Brackett : William.

Langridge : George.

Langridge : William.

Roper : William.

WINGHAM.

Fellow :—

Elgar : J. Edward.

LANCASHIRE.

ASHTON-UNDER-LYNE.

Fellow :—

Holmes : James.

BAMBER BRIDGE.

Professional Associate :—

Dixon : Francis Edward.

BLACKBURN.

Fellows :—

Bertwistle : James.

McCall : George.

CLAYTON-LE-MOORS.

Fellow :—

Fletcher : Thomas.

LIVERPOOL.

Fellows :—

Beckwith : Henry Langton.

Kirby : Edmund.

Lancaster : Charles Holland.

Pain : Coard Squarey.

Associate :—

King : William.

LEIGH.

Professional Associate :—

Selby : John Basely.

LYTHAM.

Fellows :—

Fair : James Stretton.

Fair : Thomas.

Rea : John Marcus Beaumont.

LANCASHIRE—continued.

MANCHESTER.

Fellows :—

Bancroft : Henry.

Bowden : John.

Bridgford : Ernest James.

Bridgford : Robert, C.B.

Cross : John.

Dickson : Thomas Arthur.

Dorning : Elias.

Eagle : William.

Hargraves : Stephen.

Holden : John.

Jackson : Charles.

Murgatroyd : James.

Neville : Henry William.

Pierson : Charles.

Raby : Joseph Walker.

Raby : William.

Radford : William.

Statter : Thomas.

Thompson : Edward James.

Vawser : Robert.

Wilson : Thomas Silk.

Professional Associates :—

Maxwell : Francis William.

Wallis : John David.

Wilson : William Edward.

Associate :—

Higgin : William Housman, Q.C.

PRESTON.

Fellows :—

Addie : Peter.

Fair : Jacob Wilson.

Fair : James Stretton.

Harding : Joseph.

Park : William Philip.

Rea : John Marcus Beaumont.

Veevers : Richard.

Professional Associate :—

Johnston : Walter Henry.

SCORTON.

Professional Associate :—

Bailey : Leonard.

ST. HELEN'S.

Fellow :—

Hanson : Amos.

Professional Associate :—

Booth : John Frederick.

WARRINGTON.

Fellows :—

MacIver : Colin.

White : John.

WIGAN.

Fellow :—

Fair : Jacob Wilson.

LEICESTERSHIRE.

ASHBY-DE-LA-ZOUCH.

Fellows :—

German : George.

German : John.

BLACKFORDBY.

Fellow :—

Joyce : John Hall.

LEICESTERSHIRE—*continued.*

HINCKLEY.

Fellow :—
 Thorpe : William.

KNIPTON.

Fellow :—
 Green : Valentine.

LEICESTER.

Fellows :—
 Clare : Edward Lovell.
 Clare : William Harcourt Lovell.
 Clough-Taylor : Horace George
 Draper : Arthur Thomas.
 Everard : John Breedon.
 Goddard : Joseph.
 Goodacre : Robert Johnson.
 Miles : William Frederick.
 Rolleston : John Fowke Lancelot.
 Rolleston : Wm. Gustavus Stanhope.

LOUGHBOROUGH.

Fellows :—
 Hodson : George.
 Woolley : William Edward.
Professional Associate :—
 Holbeche : Æmilian Henry.

MARKET HARBOUROUGH.

Fellows :—
 Fisher : Charles Browning.
 Fisher : Edward Knapp.
Professional Associate :—
 Coales : Herbert George.

WOODHOUSE.

Fellow :—
 Humphreys : Henry

LINCOLNSHIRE.

ALFORD.

Fellow :—
 Higgins : Frederic.

BOSTON.

Fellow :—
 Hawley : Henry Michael.

BRIGG.

Fellows :—
 Cave : Henry H.
 Tindall : Charles William.

HOLBEACH.

Fellow :—
 Abbott : William.

LEADENHAM.

Professional Associate :—
 Crofts : Ewan Neville.

LINCOLN.

Fellow :—
 Woolley : Reginald.

LOUTH.

Fellow :—
 Mason : William Ludiam.

LINCOLNSHIRE—*continued.*

METHERINGHAM.

Fellow :—
 Gilpin-Brown : William Dundas.

SPALDING.

Fellow :—
 Kingston : Samuel.

ULCEBY.

Fellow :—
 Turner : John.

WAINFLEET.

Fellows :—
 Martin : James,
Member of Council.
 Martin : Walter.
Professional Associate :—
 Bower : Arthur Wentworth Chivers.

WESTGATE.

Fellow :—
 Mason : Charles.

LONDON AND NEIGHBOURHOOD.

Fellows :—

Adams : Charles Frederick.
 Adams : Henry.
 Allen : Henry Robert.
 Arding : Charles Bennett.
 Badcock : Philip.
 Barfield : Frederic Henry.
 Barnes-Williams, Thomas.
 Barry : Charles.
 Bate : Thomas.
 Battam : Frederick Thomas.
 Batterbury : Thomas.
 Beadel : William James,
Past-President.
 Bedells : Charles Herbert.
 Bedells : Charles King.
 Beeston : Frederick.
 Beken : George.
 Bell : George Graham.
 Beningfield : Henry.
 Berridge : Robert.
 Bickerton : George Arthur.
 Bigge : Charles Selby.
 Bingham : Reuben.
 Bird : James Binfield.
 Bird : James Binfield, Jun.
 Bird : Walter.
 Blackford : Arthur.
 Blake : William John, Jun.
 Blakemore : William Agutter.
 Blashill : Thomas.
 Bolam : Charles Godfrey.
 Bolden : John Leonard.
 Bond : Erasmus.
 Bonny : James Ripboth.
 Bontor : Frank Arthur.
 Booker : Algernon Erskine.
 Bovill : Alfred.
 Bowler : William Anthony.
 Boyes : Henry Cowell.
 Bray : Harry.
 Breach : Benjamin D'Anson.
 Brereton : Franc Sadleir.
 Brinsley : George.

LONDON AND NEIGHBOURHOOD—continued.

Fellows:—

Bridgewater: Bentley James
 Brown: Bradshaw.
 Brown: Daniel Johnson.
 Brown: George James.
 Brown: William Blumfield.
 Buckland: Alfred Virgoe.
 Burnell: Edward Henry.
 Burnett: David.
 Burroughes: Thomas Henry
 Buzzard: Alfred Lindsey.

Carritt: Ernest.
 Carpenter: Evan George.
 Cartwright: Sir Henry Edward.
 Cassell: James Robert.
 Castle: Henry James, Sen.,
 Castle: Henry James, Jun.
 Castle: Sydney Charles Courtenay.
 Castle: William Henry Baldwin.
 Cates: Arthur.
 Chadwick: Spencer.
 Chancellor: Frederick.
 Chesterton: Edward.
 Cheston: Chester.
 Chinnock: Frederick George.
 Clark: Samuel.
 Clarke: Howard Chatfield.
 Clarke: Thomas Chatfield,
Vice-President.

Clifton: William Edward.
 Clutton: John,

Past-President.

Clutton: John Henry.
 Clutton: Ralph.
 Clutton: Robert George,
Member of Council.

Cobb: Herbert Mansfield.
 Cobb: Robert Lake.
 Coles: John Robert.
 Collins: Henry Hyman.
 Cook: Edward Samuel.
 Cooper: John Thomas.
 Corderoy: George.
 Crawler: John, Jun.
 Crickmay: George Rackstrow.
 Cronk: Edwyn Evans.
 Cronk: Frank.
 Cross: William Stephens.
 Currey: Henry.
 Currey: Percivall.
 Curtis: Robert Leabon.
 Curtis: Samuel Perkins.

Dale: John.
 Dallas: Edwin Stuart.
 Dash: Thomas Alexis.
 Davies: George Humphreys.
 Davis: James.
 Daw: William Herbert.
 Deacon: Thomas Mark.
 Debenham: Frank Gissing.
 Debenham: Thomas Nunn.
 Dennant: William Freeth.
 Denton: John Bailey.
 Dinwiddy: Thomas.
 Doll: Charles Fitzroy.
 Dowden: Henry Joseph.
 Dowling: Clement.
 Downing: Frederick.
 Driver: Charles William.
 Driver: Robert Collier,
Vice-President.

LONDON AND NEIGHBOURHOOD—continued.

Fellows:—

Driver: Robert Manning.
 Drury: Edward Dru.
 Dunch: Charles.
 Dunlop: Alexander Milne,
Member of Council.
 Dyer: William John.
 Eales: Frederick Ernest.
 Eiloart: Frederick Edward.
 Ellis: Henry.
 Ellis: Richard Adam.
 Ellis: Sir John Whittaker, Bart., M.P.
 Emmannel: Barrow.
 Eve: William.
 Eves: George.

Farmer: Edmund.
 Field: James Frederick.
 Field: Walter William.
 Fleetwood: George.
 Foster: Charles Rolls.
 Fowler: Sydney.
 Francis: George Futvoye.
 Fuller: Ernest.
 Fuller: George John.
 Fuller: Harry.
 Fuller: Herbert Henry.
 Furber: Herbert.
 Furber: William.

Gairdner: Edward James.
 Galsworthy: Frederick Thomas.
 Gandy: James.
 Gardiner: Edward James.
 Gardiner: William James.
 Garrard: Arthur,

Member of Council.

Gibb: William Pashley.
 Gilbert: William Henry Sainsbury.
 Girdwood: James.
 Glasier: George Henry Brougham.
 Goddard: Joseph.
 Goodchild: Josiah.
 Goodwyn: Leonard William.
 Gore: Spencer W.
 Goulding: William Purdham.
 Graves: Walter.
 Green: Samuel.
 Green: James.
 Grellier, Harley Mair.
 Gwyther: William Warlow.

Hackford: George.
 Haddock: Roland.
 Hall: John George.
 Hall: Walter.
 Hallett: William Brown.
 Hamilton: Henry.
 Hancock: William St. John Hü.
 Hansell: Reginald Goddard.
 Harcastle: Fredk. Henry Appleton.
 Harding: Edward Ernest.
 Harrington: George Frederick.
 Hart: William Frederick.
 Harvey: Frederick Henry.
 Haywood: William, Lieut.-Colonel.
 Heron: William Charles.
 Herring: William Arthur Warwick.
 Hilton: John.
 Hine: George Ernest.
 Hobson: Frederick William.
 Hope: William Elliott.
 Horne: William Edgar.

LONDON AND NEIGHBOUR-
HOOD—continued.

Fellows:—

Horsey: Frederick.
 Horsey: Thomas.
 Hovenden: Henry Edward.
 Hovenden: Thomas Henry.
 Hudson: Arthur Byrne.
 Hudson: William.
 Hugman: Charles Eady.
 Hull: Charles.
 Humphreys: Charles.
 Hunt: Henry Arthur.
 Hunt: Josiah.
 Huxley: Walter Freeman.
 I'Anson: Edward Blakeway.
 Inman: Marshall Nisbet.
 Jenkinson: William Wilberforce.
 Johnson: Henry.
 Jonas: Henry.
 Jones: Charles.
 Jones: Charles Frederick.
 Jones: Henry Arthur.
 Joseph: Delissa.
 Kedgley: Charles.
 Keirle: Robert.
 Kersey: Alexander Henry.
 King: Alfred.
 Lambert: William.
 Lansdown: George.
 Leane: George Henry.
 Leaning: John.
 Lee: Charles Williams.
 Lee: Frederick.
 Lee: Philip Shirling.
 Leonard: Henry Holmes.
 Le Rossignol: Frances.
 Lightfoot: Francis Lowry.
 Lines: Richard Samuel.
 Lofts: Henry.
 Lovegrove: Henry.
 Lovejoy: Alfred.
 Lowe: Charles Harlowe.
 Mann: Charles John.
 Mann: Robert Wilks.
 Marr: James.
 Martin: George Dennis.
 Martin: Howard.
 Masterman: George Hughes.
 Mathews: Joseph Douglas.
 Matthews: William.
 Maude: Raymond William.
 Maylard: Charles Grason.
 Middleton: Reginald Empson.
 Millar: Charles William.
 Moore: Alfred.
 Moore: Frederic.
 Moore: Harold Edward.
 Mortimer: John Camden.
 Mullett: Frederick Augustus.
 Newman: Arthur Harrison.
 Newman: George.
 Newmarch: Henry Charles.
 Newson: Harry Carss.
 Nichols: Daniel Cubitt.
 Norman: James Maurice.
 Norman: William.
 North: George.
 Northcroft: Henry.
 Notley: Richard Albert.
 Notley: Robert Pledge.

LONDON AND NEIGHBOUR-
HOOD—continued.

▲ Fellows:—

Oakley: Christopher.
Member of Council.
 Oakley: William.
 Osborne: Alfred William.
 Orgill: John Berwick.
 Page: Robert.
 Parker: Charles Alfred.
 Parr: Samuel.
 Pattisson: Jacob Luard.
 Paull: Alan.
 Payne: Alexander.
 Peck: Henry William.
 Peck: William Roland.
 Peebles: Alexander.
 Penfold: John Wornham.
Honorary Secretary.
 Pilditch: Philip Edward.
 Pollard: Harry Emans.
 Popplewell: William Willott.
 Porter: Alfred.
 Pownall: George Harry.
 Purchase: Edward Keynes.
 Read: George Huntly.
 Reddall: David Gadsden.
 Rees: William Andrew.
 Reeves: Benjamin Austen.
 Reid: Patrick Sandeman.
 Rex: William.
 Richards: Alfred.
 Richards: Henry Brinley.
 Rickman: Thomas Miller.
Member of Council.
 Riddle: Frederick Henry Brimble.
 Roberts: Richard.
 Robins: Edward Cookworthy.
 Robinson: Charles Edward.
 Robinson: Henry.
 Robson: Edward Robert.
 Rogers: Edward Phippard George.
 Rogers: William Bennett.
 Roods: Alfred.
 Rüntz: Ernest Augustus.
 Rushworth: Edmund Walter.
 Rutley: Charles.
 Ryde: Arthur Lyon.
 Ryde: Edward.
Past-President.
 St. Quintin: Perry.
 Sanday: George Henry.
 Saunders: Cecil George.
 Saunders: Edward.
 Savill: Alfred.
 Savill: Alfred, Jun.
 Selby: Charles Frederic.
 Sherrin: John Lester.
 Sherwin: Joseph Henry.
 Shoppee: Charles Herbert.
 Shoppee: Charles John.
Vice-President.
 Simms: Walter.
 Smallpeice: George Baker.
 Smith: Charles John.
 Smith: Edward.
 Smith: Henry.
 Smith: Henry Herbert.
 Snelling: Henry.
 Southwell: Charles Josiah.
 Squarey: Elias Pitts.
President.

LONDON AND NEIGHBOURHOOD—continued.

Fellows :—

Squire: Richard.
 Stanger: Caleb.
 Stenning: Alexander Rose.
 Stephenson: Charles William.
 Stevens: William Charles.
 Steward: Herbert Thomas.
 Stock: Henry.
 Stoner: Alfred.
 Strudwick: Hayward James.
 Strudwick: William Henry.
 Tanner: Henry.
 Tatham: George Henry.
 Taylor: Edward Fergusson.
 Tewson: Edward.
 Tewson: Edward Arthur.
 Theobald: Henry Wells Dewhurst.
 Thompson: Arthur Edward.
 Thurgood: Herbert John.
 Thurgood: William Henry.
 Thynne: Edward Lewis.
 Thynne: Frederick George.
 Thynne: Guy Harry.
 Tolley: James.
 Tootell: Richard William.
 Treadwell: Henry John.
 Trist: John William.
 Trollope: Charles Brown
 Trumper: Richard.
 Tuckett: Philip Debell.
 Tunley: George.
 Vaizey: John George.
 Venables: Frederick.
 Vernon: Arthur.
 Vernon: Walter Liberty.
 Vigers: Astley.
 Vigers: Edward.
 Vigers: Francis,
 Vice-President.
 Vigers: Leslie Robert.
 Vigers: Martin.
 Vigers: Robert,
 Member of Council.

Wagstaffe: Thomas Rogers.
 Walcott: Lyons Roden Sympson.
 Walker: Edward Robinson.
 Walker: Samuel.
 Walmisley: Arthur Thomas.
 Warner: William Henry.
 Waters: William Richard.
 Watney: Danie',
 Member of Council.
 Watney: Walter Daniel.
 Watts: Charles.
 Weatherall: Henry.
 Weaver: William.
 Wharton: Thomas George.
 Whitaker: George.
 Whiteley: Charles Percy.
 Widnell: Frederick Grainger.
 Wilkinson: George Ayscough.
 Wilkinson: William.
 Wilson: Jacob.
 Withall: Richard Augustus.
 Wood: John Daniel.
 Woods: Henry.
 Wreathall: Robert T.

Professional Associates :—

Adkin: Beniah Whitley.

LONDON AND NEIGHBOURHOOD—continued.

Professional Associates :—

Baker: Cecil Cantley.
 Ballard: William Washington.
 Beadel: Henry Grant.
 Beauchamp: Charles Davie.
 Benson: Robert Alan.
 Bishop: Reginald George.
 Boodle: Francis Edward.
 Bousfield: Edwin Vaughan Davenport
 Briggs: John.
 Brown: William Arthur.
 Browne: Flint.
 Buckland: William Thomas.
 Bushell: Henry.
 Buss: Fleetwood George William.
 Cardall: Frederic William.
 Carter: Alfred Presley.
 Chalcraft: Henry Terrell.
 Chapman: Vaughan Godfrey St. John
 Chester: William Richard.
 Christy: Archibald Ernest.
 Clarke: Percy Henry.
 Clayden: Walter.
 Collier: Arthur Charles.
 Collingham: J. Cyril Lees.
 Collins: Marcus E.
 Cooke: William George.
 Cresswell: John Theodore Ross.
 Cross: John.
 Crouch: James Leonard.
 Cudlipp: William.
 Cumberbatch: Carlton Parry.
 Daffarn: Thomas Alfred.
 Dansie: Frederick Crown.
 Dash: Roland Ashford.
 Davis: Charles James.
 Dawson: Walter Henry.
 Done: John James.
 Drew: Allen.
 Dunning: Bernard Simon.
 Easton: Edward.
 Ellis: Charles Godwin.
 Ellis: Herbert Moates.
 Ellis: Leonard Ashby.
 Ellis: Ralph Staples.
 Elwell: William Henry.
 Evans: Tom Augustus John.
 Eves: William Lionel.
 Fawcett: James Pogue.
 Few: Harry Garrard.
 Fitness: John Francis.
 Fletcher: George Rivers.
 Flint: William Hurst.
 Foster: Frank.
 Freeman: Sydney.
 Furber: Henry Aubrey.
 Furber: Percy Norman.
 Fyfe: George Peters Collier.
 Gibbon: William Jacomb.
 Gibson: Walter Matthew.
 Goe: William Joll.
 Gow: James.
 Grant: Harry Graeme.
 Green: James Henry Townsend.
 Green: Thomas Joseph.
 Greenop: Edward.
 Grimes: Ralph Fearon.
 Hamilton: John Paynter.
 Harding: Frederick Allcroft.

LONDON AND NEIGHBOURHOOD—continued.

Professional Associates :—

Harper: Edgar Josiah.
 Haskins: William Albion.
 Hebden: George Radcliffe.
 Hedger: Arthur Constantine.
 Henderson: Henry Arthur.
 Henry: Edward Hugh.
 Hicks: Stanley.
 Hodge: Leonard Percival.
 Holland: Thomas James, Jun.
 Holmes: James Thomas.
 Hopkins: Edwin.
 Howell: Ernest John.
 Hussey: George Henry Cleland.
 Ingram: Henry Law.
 Ivimey: Alfred.
 Jessett: Charles.
 Johnston: Andrew.
 Jones: Frederick Herbert.
 Jones: Thomas.
 Jordan: George Henry.
 Jull: William Vincent.
 Keeling: Gilbert.
 Keer: William.
 Kettle: Frederick Charies.
 King: William Isaac.
 Lambert: Godfrey Charles.
 Lawrence: William Robert.
 Lightfoot: John George.
 Lofts: Henry Fairlam.
 Lovesay: William.
 Lowe: Charles Robert.
 Lucas: Joseph.
 Lynch: James Henry.
 Maddox: Charles Ralph.
 Mann: Robert Bagshaw.
 Marriott: George Wharton.
 Mead: John Henry.
 Merrett: James.
 Meston: Joseph Fyfe.
 Milnes: Robert, Jun.
 Mixer: Edward.
 Moss: Thomas Walt. r.
 Mylne: William John Home.
 Newman: Charles Henry.
 Norris: Edward James.
 Norton: George Percy.
 Page: Thomas Gowland.
 Parry: Richard.
 Pearce: Frederick William.
 Pearce: William John.
 Perks: Sidney.
 Perrers: Harry Wilson.
 Fewtress: Herbert Wilmshurst.
 Phillips: John Henry.
 Physick: Walter Frederick.
 Price: Thomas William.
 Rex: Charles William.
 Rex: Francis Herbert.
 Roberts: Charles Gordon.
 Roberts: Q. Charles.
 Robinson: Alfred Whitmore.
 Robinson: James Thomas.
 Ross: David James.
 Ryde: Charles Bertram.
 Sabin: Joseph Henry.
 Sadler: George William, Jun.
 St. Quintin: Richard Samuel.

LONDON AND NEIGHBOURHOOD—continued.

Professional Associates :—

Saunders: Samuel Brown.
 Sexby: John James.
 Shackle: Edward Neild.
 Sherry: Nathaniel.
 Skewis: Edwin.
 Skingle: Alfred.
 Slade: Isaac.
 Smith: George Cecil.
 Smyth: Edward.
Professional Associate of Council.
 Stacey: William.
 Stanning: Percy Haines.
 Stevenson: Frederick J.
 Stower: Joseph.
 Stucke, William Henry.
 Swinscow: Harold Edwin.
 Tapp: Arthur.
 Taylor: George.
 Theobald: Henry.
 Thompson: Alfred.
 Thurgood: Ernest Charles.
 Trollope: Henry Charles.
 Trumper: John Alfred.
 Varley: Thomas Ernest.
 Vigers: Sidney.
 Walker: Leon Victor.
 Ward: George.
 Warton: Wilfred.
 Webb: Jonas Marshall.
 Wells: Edward Ogbourn.
 Weston: George.
 Wheeler: Charles Trevor Ogle.
 Wilcocks: Frederick C.
 Willard: Thomas.
 Williams: Leonard James.
 Williams: Sidney.
 Williams: Tom.
 Willoughby: Charles William.
 Wood: Henry.
 Woodward: William.
 Wordley, Alexander George.
 Worthington: James Scott.
 Young: Andrew.
 Young: Morgan Henry.

Associates :—

Anderson: Charles Henry, Q.C., M.P.
 Banks: John Eldon.
 Barnes: George Frederick.
 Barry: John Wolfe.
Associate of Council.
 Batten: John Winterbotham.
 Beale: James Samuel.
 Bidder: George Parker, Q.C.
 Birch: Robert William Peregrine.
 Bramwell: Sir Fredk. Joseph, F.R.S.
 Bristowe: Arthur Lynn.
 Bund: John W. Willis.
 Carlisle: William Thomas.
 Castle: Edward James, Q.C.
 Clarke: Sir Edward, Q.C., M.P.
 Clode: Walter.
 Clutton: Hubert Spencer.
 Cripps: Charles Alfred.
 Dethridge: Frank.
 Druce: Samuel Benjamin Large.
 Elton: Charles Isaac, Q.C., M.P.

LONDON AND NEIGHBOURHOOD—continued.

Associates :—

Fowler: Sir John.
 Freeman: George Mallows.
 Freshfield: Edwin.
 Freshfield: William Dawes.
 Goldney: Gabriel Prior.
 Grantham: Richard Boxall.
 Grantham: Richard Fuge.
 Groves: William.
 Gully: William Court, Q.C., M.P.
 Halsey: Edward Joseph.
 Hamilton: Henry Best Hans.
 Hamond: Thomas Astley Horace.
 Hill: Alexander Staveley, Q.C., M.P.
 Hudson: Alfred Arthur.
 James: Sir Henry, Q.C., M.P.
 Ledgard: Frederick Thos. Durell, Q.C.
 Littler: Ralph Daniel Makinson, Q.C.
 Lott: Joseph.
 Marriott: The Right Hon. Sir William Thackeray, Q.C., M.P.
 Marshall: Frederick.
 Meysey-Thompson: Albert Childers
 Moulton: John Fletcher, Q.C.
 Munton: Francis Kerridge.
 Philbrick: Frederick Adolphus, Q.C.
 Pollard: Edward Hutchinson.
 Pope: Samuel, Q.C.
 Potter, William, Q.C.
 Procter: Foster Wilfred.
 Quick: Joseph.
 Rees: John Charles.
 Rickards: Arthur George.
 Rigg: Herbert Addington.
 Ryde: Walter Cranley.
 Shoppee: Gerald Augustine.
 Sladen: St. Barbe.
 Smith: Lumley, Q.C.
 Statham: William Arnold.
 Stephens: Pembroke S., Q.C.
 Stevens: William Richard.
 Stevenson: George Wilson.
 Sutton: Henry.
 Taylor: John Herbert.
 Trollope: George Francis.
 Warren: Reginald Augustus.
 Webster: Sir Rchd. Everard, Q.C., M.P.,
Associate of Council.
 Wheeler: Thomas Whittenbury, Q.C.
 White: Frederick Meadows, Q.C.
 White: Thomas Jennings.
 Will: John Shiress, Q.C., M.P.
 Winckworth: Lewis.
 Wing: Thomas Twining.
 Woolf: Sidney.

MONMOUTHSHIRE.

NEWPORT.

Fellows :—

Graham: William.
 Hitchcox: William.
 Rees: William George.
 Tanner: William.

PONTYPOOL.

Professional Associate :—
 Morgan: Alfred Walker.

NORFOLK.

ATTLEBOROUGH.

Fellow :—

Salter: William Herbert.

COSSEY.

Fellow :—

Coverdale: Henry.

COSTON.

Fellow :—

Atkins: Sydney George.

DOWNHAM.

Fellow :—

Hawkins: Charles.

EAST RAYNHAM.

Fellow :—

Gayford: Henry John.

KING'S LYNN.

Fellow :—

Wright: William Edward.

MELTON-CONSTABLE.

Fellow :—

Beck: Edward William.

NORWICH.

Fellows :—

Hornor: Charles Jared.
 Hornor: Francis.
 Mills: Samuel Mealing.
 Rogers: Ernest Edward.
 Rose: Thomas.

SANDRINGHAM.

Fellow :—

Beck: Edmund.

SCOLE.

Fellow :—

Scriven: Charles Herbert.

THETFORD.

Fellow :—

Barker: Caleb.
Professional Associate :—
 Hall: Charles Pell.

WEST RUDHAM.

Fellow :—

Freuer: William.

NORTHAMPTONSHIRE.

HORTON.

Fellow :—

Cave: Thomas Newman.

KETTERING.

Fellow :—

Bolam: Charles Godfrey.

NORTHAMPTON.

Fellow :—

Law: Edmund.

OUNDLÉ.

Fellow :—

Parnell: Robert.

PETERBOROUGH.

Fellows :—

Edwardes: Charles Bidwell.
 Laurance: John.
 Parnell: Robert.
Professional Associate :—
 Lyster: Thomas Rice Somerville.

NORTHUMBERLAND.

ALNWICK.

Fellows :—

Tomlinson: Thomas.

Wilson: Jacob.

BOTHAL.

Fellow :—

Sample: Thomas.

NEWCASTLE-UPON-TYNE.

Fellows :—

Armstrong: Thomas John.

Bolam: William Thomas.

Parmeter: Frank.

Taylor: John William.

NOTTINGHAMSHIRE.

BOTTESFORD.

Fellow :—

Green: Valentine.

EAST BRIDGFORD.

Fellows :—

Beaumont: Charles.

Beaumont: George.

EPPERSTONE.

Fellow :—

Huskinson: William Lambe.

Professional Associate :—

Huskinson: Thomas William.

MANSFIELD.

Fellows :—

Neale: Charles James.

Turner: Frederick John.

Professional Associate :—

Butterworth: Josiah.

NOTTINGHAM.

Fellows :—

Barnes: John William James.

Evans: Robert.

Hine: George Thomas.

Jackson: Frederick.

Walker: Herbert.

Professional Associate :—

Payne: William Percy.

OLLERTON.

Fellow :—

Bell: Joseph Askew.

OSBERTON.

Fellow :—

Lister-Kaye: Charles Wilkinson.

SOUTH COLLINGHAM.

Fellows :—

Wigram: John.

Woolley: Reginald.

Woolley: Thomas Cecil Smith.

WOLLATON.

Fellow :—

Wright: William.

WORKSOP.

Fellow :—

Turner: Thomas Warner.

OXFORDSHIRE.

BANBURY.

Fellow :—

North: George Frederic.

BICESTER.

Fellows :—

Castle: George Richard.

Holiday: Frederick Dean.

Little: William Davis.

Paxton: Edward Hayton.

Professional Associate :—

Davey: Henry Thomas.

CHARLBURY.

Professional Associate :—

Carter: Frank Wellington.

HENLEY-ON-THAMES.

Fellow :—

Beever: William Frederick Holt.

Professional Associates :—

Simmons: Charles Franklin

Simmons: William Anker.

KIRTLINGTON.

Professional Associate :—

Dashwood: Frederick Loftus.

OXFORD.

Fellows :—

Castle: Arthur.

Castle: Robert.

Egerton: Hubert Decimus.

Field: Francis Hayward.

Galpin: Charles Alexander.

Galpin: John.

Professional Associate :—

Rose: Edward Joseph.

TETSWORTH.

Fellow :—

Watson: John.

Professional Associates :—

Watson: James Bruce.

Watson: John, Jun.

WITNEY.

Professional Associate :—

Bateman: Arthur Charles.

SHROPSHIRE.

BROSELY.

Fellow :—

Thursfield: Thomas Howells.

BRIDGNORTH.

Fellow :—

Wyley: Henry James.

CHIRBURY.

Fellow :—

Morris: Edward Henry.

CLEOBURY NORTH.

Fellow :—

Dodgson: Wilfred Longley.

ELLESMERE.

Fellow :—

Tower: Brownlow Richd. Christopher.

LUDLOW.

Fellow :—

Dodgson: Wilfred Longley.

SHROPSHIRE—*continued.*

SHIFNAL.

Fellow :—
Lane: Cecil Newton.

SHREWSBURY.

Fellows :—
Ashdown: Augustus Harding.
Burd: Laurence.
Burd: Timotheus Henry.
Evans: William Ernest.
Swettenham: William Norman.
Wyley: William John.
Professional Associate :—
Salt: Reginald Nowell.

UPPINGTON.

Professional Associate :—
Hall: William Timothy.

SOMERSETSHIRE.

BATH.

Fellows :—
Silcock: Thomas Ball.
Spackman: Henry.

BRUTON.

Fellow :—
Bennett: Thomas Oatley.

MISTERTON.

Fellows :—
Combes: Cyrus.
Parsons: Frank Donisthorpe.
Parsons: Henry.
Parsons: Robert Maurice Peters.

SHEPTON MALLET.

Fellows :—
Heard: Herbert.
Wainwright: Charles Rawlinson.
Wainwright: Charles Rawlinson, Jun.

TAUNTON.

Fellows :—
Hussey: Frank Tooze.
Knollys: James Edward.

WELLS.

Fellow :—
Hippisley: Edwin.

STAFFORDSHIRE.

ENDON.

Fellow :—
Heaton: George Herbert.

LICHFIELD.

Fellow :—
Inge: Charles Henry.

LITTLE INGESTRE.

Fellow :—
Mynors: Walter Charles Towers.

MARCHINGTON.

Fellow :—
Hardy: Richard Thomas Ash.

NEWBOROUGH.

Professional Associate :—
Hussey: Robert.

STAFFORDSHIRE—*continued.*

STAFFORD.

Fellows :—
Sandy: Henry.
Turnor: Exsuperius Weston.
Associate :—
Hill: Alexander Staveley, Q.C., M.P.

STOKE-UPON-TRENT.

Fellow :—
Forshaw: Edward.
Professional Associate :—
Blundell: Harry.

TAMWORTH.

Professional Associate :—
Bidwell: Shelford.

WOLVERHAMPTON.

Professional Associate :—
Vale: Henry.

SUFFOLK.

BURY ST. EDMUNDS.

Fellow :—
Scott: Henry Lacy.

HOLLESLEY BAY.

Professional Associate :—
Beard: Edwin Thomas.

HORSECROFT.

Fellow :—
Simpson: Robert Thomas.

IPSWICH.

Fellows :—
Spurling: Henry.
Turner: William.
Professional Associates :—
Bond: Frederick George.
Turner: Percy.

NEWMARKET.

Professional Associate :—
Boa: Andrew.

SUDBURY.

Fellow :—
Coote: George.

WOODBIDGE.

Professional Associate :—
Arnott: John.

SURREY.

CHERTSEY.

Professional Associate :—
Waterer: Clarence.

COBHAM.

Associate :—
Seth-Smith: Archibald.

EGHAM.

Fellow :—
Menzies: William.

SURREY—continued.

ENGLEFIELD GREEN.

Fellow :—

Simmonds: Frederick.

FARNHAM.

Fellows :—

Eggar: James Alfred.

Nash: Alfred James.

Professional Associate :—

Williams: William Welsby.

GODALMING.

Fellow :—

Mellersh: Alfred William.

GUILDFORD.

Fellows :—

Bowles: Arthur Humphrey.

Drewitt: George.

Ellis: Ernest Harold.

Lee: William.

Messenger: William Harry.

Smallpiece: George Baker.

LEATHERHEAD.

Fellow :—

Noel: Byron Bruce.

MAYBURY.

Professional Associate :—

Rigden: Charles Furner.

OCKHAM.

Professional Associate :—

Cheney: Edwin John.

REDHILL.

Fellow :—

Stacey: Harrie.

REIGATE.

Fellows :—

Clutton: Henry.

Clutton: Ralph William.

Lees: John.

Pym: George Edwin.

Professional Associates :—

Blunt: Herbert Arthur Scawen.

Garrod: Herbert James.

Rand: John.

Thornton: William Henry.

Associate :—

Head: John Merrick.

RICHMOND.

Fellow :—

Chancellor: Albert.

Professional Associate :—

Cave: Basil Shillito.

WIMBLEDON.

Fellow :—

Osborne: Alfred William.

SUSSEX.

BRIGHTON.

Fellows :—

Wilkinson: Thomas.

Wood: Frederick.

SUSSEX—continued.

CHICHESTER.

Fellows :—

Hobgen: Francis Neale.

Wyatt: Oliver Newman.

CRAWLEY.

Fellow :—

Wood: William.

Professional Associate :—

Taylor: George.

EASTBOURNE.

Professional Associate :—

Woolnough: John William.

EAST GRINSTEAD.

Fellow :—

Turner: Charles.

HAILSHAM.

Fellow :—

Burtenshaw: Albert.

HASTINGS.

Fellows :—

Dray: Alfred.

Vernon: Walter Liberty.

Vidler: James Coleman.

Woodhams: James.

HAYWARD'S HEATH.

Fellow :—

Bannister: Thomas.

HORSHAM.

Fellow :—

King: Frank Hulme.

LEWES.

Fellows :—

Card: Henry Curtis.

Ingram: Walter Fielde.

Morris: Herbert.

Powell: Reginald Henry.

Professional Associates :—

Card: Henry.

Powell: Hubert John.

PETWORTH.

Fellow :—

Watson: Herbert Edward.

Professional Associate :—

Taylor: Matthew.

PRESTON.

Professional Associate :—

Udny: Augustus Charles.

PULBOROUGH.

Professional Associate :—

Courthorpe: Alexander.

RYE.

Fellow :—

Vidler: James Coleman.

SEAFORD.

Fellow :—

Turner: William Webb.

SUSSEX—continued.

UCKFIELD.

Fellow :—
Colgate : Thomas.
Professional Associate :—
Scarlett : Harry.

WARWICKSHIRE.

ALCESTER.

Fellow :—
Raikes : Col. George Whittington.

BIRMINGHAM.

Fellows :—
Bettridge : Edward.
Clarke : Richard.
Couchman : Robert Edward.
Fowler : Henry.
Fowler : Richard.
Gibson : Denston.
Godfrey : Robert.
Grimley : Edwin Fearn.
Grimley : Thomas.
Hedley : Robert Wilkin.
Hendriks : Henry.
Holbeche : Robert Neville.
Mason : William Arthur.
Mathews : George Spencer.
Mathews : William.
Member of Council.
Robins : William Henry.
Roderick : John.
Smith : Frank.
Smith-Ryland : Charles Alston.
Willmott : Francis.
Willmot : George Dyott.
Willmot : John.
Professional Associate :—
Couchman : Henry Boteler.

LEAMINGTON.

Fellow :—
Fayerman : George Metcalfe.

LEEK WOOTEN.

Fellow :—
Donne : Henry.

MILVERTON.

Professional Associate :—
Smith : Frank William.

WARWICK.

Fellows :—
Fosbery : William Thomas Exham.
Margetts : John William.

WESTMORELAND.

KENDAL.

Fellow :—
Webster : Alexander.

KIRKBY LONSDALE.

Fellow :—
Punchard : Frederick.

MILNTHORPE.

Fellow :—
Holme : John.

WILTSHIRE.

CHIPPENHAM.

Fellows :—
Marshall : Lionel Hasler.
Napier : Henry Burroughes.
Smith : Henry Herbert.
Watkins : Robert Arundel.

DEVIZES.

Fellow :—
Canning : William Browne.

DOWNTON.

Fellow :—
Squarey : Elias Pitts,
President.
Associate :—
Fream : William.

MARLBOROUGH.

Fellow :—
Jeans : Mark.

PEWSEY.

Fellow :—
Ferris : George.

SALISBURY.

Fellows :—
Bath : Fred.
Canning : William Browne.
Gater : Caleb William.
Hannen : Reginald St. John.
Rawlence : Ernest Alfred.
Rawlence : James.
Rigden : Henry William.
Rigden : John Lambe.
Squarey : Elias Pitts,
President.

TISBURY.

Fellows :—
Combes : Cyrus.
Lightfoot : Henry Le Blanc.
Parsons : Frank Donisthorpe.

WARMINSTER.

Fellows :—
Cruse : Edmund.
Jones : Henry Parr.

WORCESTERSHIRE.

EVESHAM.

Fellows :—
Righton : Edward Grantham.
Smith : William.

STOURBRIDGE.

Fellows :—
Fiddian : William.
King : Henry.
Professional Associate :—
Barratt : Harry.

WORCESTER.

Fellows :—
Buck : Albert.
Buck : Herbert Wilson.

YORKSHIRE.

BARNSELEY.

Fellow :—

Wade: John.

Professional Associate :—

Wade: Henry.

BINGLEY.

Fellow :—

Armistead: Richard.

BOOTHAM.

Professional Associate :—

Kerr: Arthur Herbert.

BRADFORD.

Fellows :—

Cowgill: William.

Smith: Joseph.

Smith: Wheeler.

BRIDLINGTON QUAY.

Fellow :—

Birkett: William.

COPLEY.

Professional Associate :—

Child: Edmund Herbert.

DONCASTER.

Fellow :—

Darley: William.

Professional Associate :—

Peace: Alfred Lindley.

DRIFHLINGTON.

Fellow :—

Clare: Edward Lovell.

GOOLE.

Professional Associates :—

Tudor: Colin Augustus Buchanan.

Tudor: Edward Charles Buchanan.

GUISBROUGH.

Fellow :—

Clarke: John William.

HALIFAX.

Fellow :—

Horsfall: Richard.

Professional Associate :—

Hebblethwaite: Charles Henry.

HESLINGTON.

Professional Associate :—

Melrose: Frank.

HUBY.

Professional Associate :—

Crosland: Walter.

HUDDERSFIELD.

Fellows :—

Abbey: Joe Burman.

Brook: James.

Professional Associates :—

Demetriadi: Thomas Marsden.

Shaw: Arthur.

HULL.

Fellows :—

Botterill: William.

Fryer: George.

Hebblethwaite: Louis.

Tiffen: John Henry.

Tiffen: Joseph.

Todd: William Henry.

Wellsted: William Henry.

YORKSHIRE—continued.

LEEDS.

Fellows :—

Cundy: Hubert John.

Gott: Frank.

Hepper: John.

Jones: James William.

Newsam: Samuel Waterhouse.

Oldroyd: Linley.

Richardson: John.

NORTON.

Fellow :—

Abbott: Robert Thomas G.

PENISTONE.

Professional Associate :—

Hinchcliffe: John, Jun.

REDCAR.

Fellow :—

Rutherford: James.

SHEFFIELD.

Fellows :—

Flockton: Thomas James.

Fowler: Frederick.

Innocent: Charles John.

Massie: Frank.

Sampson: George.

Scargill: Alfred.

Professional Associate :—

Palamountain: Joseph William.

WAKEFIELD.

Fellow :—

Kaye: John Edward.

WETHERBY.

Fellow :—

Cundy: Hubert John.

YORK.

Fellows :—

Clutton: William James.

Fryer: George.

Watson: Herbert Edward.

Professional Associate :—

Lee: George Cansfield.

IRELAND.

DONEGAL.

LETTERKENNY.

Fellow :—

Murphy: Edmund.

DUBLIN.

DUBLIN.

Fellow :—

Grey: Charles Grey.

Professional Associate :—

Millward: Isaac.

SCOTLAND.

EDINBURGH.

EDINBURGH.

Fellow :—

Paterson : Robert.

Professional Associate :—

Henderson : Richard.

FORFARSHIRE.

DUNDEE.

Fellow :—

Buchan : Thomas.

LANARKSHIRE.

GLASGOW.

Fellows :—

Binnie : Thomas.

Smellie : Thomas Davies.

SUTHERLANDSHIRE.

GOLSPIE.

Fellow :—

McLean : Donald.

WALES.

CARMARTHENSHIRE.

LLANDILO.

Fellow :—

Davies : John Morgan.

LLANDUDNO.

Fellow :—

Gillart : David.

LLANELLY.

Fellow :—

Rosser : William.

CARNARVONSHIRE.

BANGOR.

Fellow :—

Dew : William Arthur.

CRICCIETH.

Fellow :—

Jones : Walter Butler Clough.

FLINTSHIRE.

WHITFORD.

Fellow :—

Pickering : William Cloves.

GLAMORGANSHIRE.

CARDIFF.

Fellows :—

Blosse : Edward F. Lynch.

Brown : Thomas Forster.

Corbett : Edwin Wortley Montagu.

Waring : Charles Edward.

Waring : Thomas.

ELY.

Fellow :—

Phillips : Frederick Hamilton.

NEATH.

Fellow :—

Sheppard : Osborne.

LLANDAFF.

Fellow :—

Williams : William Herbert.

Professional Associate :—

David : Edmund Ussher.

ST. FAGANS.

Fellow :—

Forrest : Robert.

MERIONETHSHIRE.

BALA.

Fellow :—

Williams : John.

MONTGOMERYSHIRE.

KERRY.

Fellow :—

Poundley : John Edward.

Professional Associates :—

Birch : Walter de Houghton.

Swetenham : Henry.

LLANIDLOES.

Fellows :—

Grant : James.

Powell : Evan.

MACHYNLLETH.

Fellow :—

Gillart : Richard.

WELCHPOOL.

Fellow :—

Addie : William Forrester.

PEMBROKESHIRE.

HAVERFORDWEST.

Fellow :—

Owen : Thomas Rule.

Professional Associate :—

Owen : Thomas Henry.

RADNORSHIRE.

GLASBURY.

Professional Associate :—
Gunter: James.

RHAYADER.

Fellow :—
Williams: Stephen William.

FOREIGN PARTS.

BRITISH HONDURAS.

Fellow :—
Usher: Alfred

CEYLON.

Professional Associate :—
Thornton: William Henry.

CHINA.

Fellow :—
Hancock: William St. John HU.

COSTA RICA.

Associate :—
Jongh: John Isidore de.

FOREIGN PARTS—continued.

DOMINICO.

Fellow :—
Robins: Edward.

GRAND CANARY.

Professional Associate :—
Wight: Norman

NATAL.

Fellow :—
Rigden: John Lambe.

STRAITS SETTLEMENTS,
SINGAPORE.

Fellow :—
Arch: Arthur Joseph Edwin.

TRINIDAD.

Professional Associate :—
Dobie: Henry.

QUEENSLAND.

Professional Associate :—
Callendar: William Jackson.

SYDNEY.

Fellow :—
Vernon: Walter Liberty.



